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HEALTH AND SAFETY PLAN

Bunker Hill Superfund Site

Mine Operations Area
Asbestos Removal and
Building and Structure Demolition

PRESENTED TO

BUNKER LIMITED PARTNERSHIP
Kellogg, Idaho

PREPARED BY

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HEALTH AND SAFETY PLAN ACKNOWLEDGEMENT

All employees who work on site for more than two consecutive days, or who enter the exclusion zone for any length of time, must read and understand the Health and Safety Plan. Section 11.0, the Contingency Plan procedures must be understood in case of emergency.

The undersigned have read and understand the Health and Safety and Contingency Plans

Name (printed)	Signature	Date

1.0 INTRODUCTION AND SCOPE OF WORK

The following is the Health and Safety Plan for removal and disposal of asbestos and asbestos siding, building washdown, demolition of several buildings and structures with salvage or disposal of materials, soil removal and replacement and site grading at the Bunker Hill Mine site in Kellogg, Idaho. The Health and Safety Plan outlines the minimum health and safety requirements for this project. This Plan may not be changed without review and approval from both the Project Manager and the Rust Remedial Services, Inc. (RRS) Project Health and Safety Manager. Rust Remedial Services, Inc. affirms that this plan conforms to the proposal documents provided by the Bunker Limited Partnership (BLP).

The Rust Remedial Services Injury and Illness Prevention Plan describes the RRS health and safety program and is included as Appendix A.

2.0 KEY PERSONNEL AND ASSIGNMENT OF SAFETY RESPONSIBILITIES

2.1 PURPOSE

Responsibilities will be assigned and appropriate authority will be established for the purpose of enforcement and compliance with the safety policies and procedures within this Plan.

2.2 PROJECT MANAGER

The Project Manager has the overall responsibility for the health and safety of all employees on site. In the event of an emergency the Project Manager's authority shall only be preempted by that of officials from government agencies or BLP's on-site representatives. The Project Manager has the authority to stop work, if necessary, to correct or prevent unsafe conditions.

2.3 SITE SUPERVISORS

Site supervisors report to the Project Manager and have the primary responsibility of enforcing the policies and procedures of the Health and Safety Plan. Through direction and example, supervisors are responsible for integrating hazard recognition and control into all work activities.

2.4 SITE SAFETY OFFICERS

The Site Safety Officer (SSO) will report to the Project Manager and receive support from RRS health and safety personnel. One (1) SSO must be present on the job site during each work shift. The SSO will be responsible for implementing the site-specific Health and Safety Plan through the following activities:

- Implementing safety training and information sessions;
- Maintaining the on-site medical surveillance and emergency medical treatment programs, and assisting in on and off-site emergencies;
- Maintaining the personnel air-monitoring program;
- Safety compliance and recordkeeping;
- Technical liaison to regulatory agency personnel on matters related to occupational health and safety;
- Reviewing planned site activities and implementing safety procedures to complete remediation activities safely; and
- Implementing and overseeing the industrial hygiene program.

The Site Safety Officer is responsible for contacting the Project Manager and requesting a suspension of work operations, if necessary, to correct or prevent unsafe

conditions.

2.5 FIELD TECHNICIANS

Field technicians are responsible for reporting any unsafe or unhealthful work conditions to their supervisor. They are responsible for keeping up-to-date on health and safety issues through attendance at the daily health and safety meetings.

2.6 SUB-CONTRACTORS

Subcontractors are responsible for following this HSP and all pertinent OSHA construction and general industry standards, including those governing hazardous waste sites, asbestos, lead, arsenic and cadmium, as applicable. Subcontractors are encouraged to develop and implement a written Health and Safety program in compliance with all standards and this plan. Under no circumstances will RUST's failure to fulfill any of its responsibilities be regarded by the subcontractor as a reason for not fulfilling his or her responsibilities.

3.0 HAZARD ASSESSMENT AND CONTROL MEASURES

3.1 CHEMICAL CONTAMINANTS

The primary contaminants of concern in this remediation project are dust, asbestos and metals; particularly lead. The following table lists the exposure limits for dust and some of the metals which may be present at the site.

Contaminant	TLV-TWA*	OSHA PEL**	NIOSH REL***
Total dust	10.0 mg/m^3	15.0 mg/m^3	None given
Arsenic	0.2 mg/m^3	0.01 mg/m^3	0.002 mg/m^3
Lead	0.15 mg/m^3	0.05 mg/m^3	0.1 mg/m^3
Cadmium	0.2 mg/m^3	0.05 mg/m^3	Lowest feasible limit
Asbestos	0.2 fibers/cc	0.2 fibers/cc	0.1 fibers/cc

* American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value - Time-Weighted Average (8 hr.).

** Occupational Safety and Health Administration Permissible Exposure Limit (8 hr.).

*** National Institutes of Occupational Safety and Health Recommended Exposure Limit (8 hr.).

In addition to the metals and asbestos, carbon monoxide may be generated if any internal combustion engine equipment is operated inside a building.

3.1.1 Health Effects

Metals

The effects of overexposure to these contaminants are varied. Overexposure to nuisance dust can cause eye, skin and respiratory irritation.

Arsenic overexposure can cause anemia, liver and kidney damage and neurological problems. Inhalation, industrial and agricultural exposures have been linked to skin and respiratory cancers

Lead overexposure can cause damage to the brain, blood-forming organs, liver, kidneys, central nervous system and lungs, as well as producing eye and skin irritation.

Cadmium over exposure can cause severe damage to the liver and kidneys and extreme irritation of the respiratory and digestive tracts.

Carbon Monoxide

Carbon monoxide interferes with the bloods ability to carry enough oxygen to the cells. Overexposure to CO can result in asphyxiation even when there is adequate oxygen in the atmosphere. Symptoms of exposure include headache, nausea, reduced manual dexterity, impaired judgment, vomiting, coma and convulsions.

The permissible exposure limit for CO is 35 ppm and the short term exposure limit is 200 ppm. For CO concentrations up to 200 ppm employees may enter a building for a maximum of 15 minutes. If employees must remain in a building for longer than 15 minutes and the CO level is above 35 ppm then supplied air respirators are required.

The Immediately Dangerous to Life or Health level for CO is 1500 ppm. Supplied air respirators are allowed up to a maximum concentration of 800 ppm before work must stop and the building is aired out.

CO Level	Respiratory Protection
over 800 ppm	Stop operations and air out Silo Building
200 - 800 ppm	Supplied Air Respirators
35 - 200 ppm	More than 15 Min - Supplied air Respirators
0 - 35 ppm	Respiratory Protection Not Required

Asbestos

Asbestos is a mineral and can cause asbestosis, a chronic lung condition, or lung cancer. Asbestos does not cause acute symptoms, but is very dangerous even at low levels for long term exposures.

3.2 PHYSICAL HAZARDS

All activities within the scope of this project must comply with federal OSHA construction safety standards and EPA and AHERA regulations for asbestos work.

3.2.1 Head Injuries

All personnel will be required to wear a hard hat while on site. The hat must be worn properly and not altered in any way that would lessen the degree of protection offered.

3.2.2 Foot Injuries

Steel-toed safety shoes are required while on site. To afford maximum protection, all safety shoes must meet ANSI Standards. Where potential exposure to chemical hazards exits, employees will be provided with, and required to wear, suitable chemical-resistant rubber boots or overshoes. For demolition work on wooden structures, steel inserts will be worn to protect against foot puncture injuries.

3.2.3 Eye Injuries

Eye protection is required to prevent eye injuries from contact with chemical or physical agents. Eye protection will vary from safety glasses with side shields to full-face respirators. Eye protection must be worn at all times on site.

3.2.4 Noise Exposure

On-site personnel may be exposed to occupational noise from heavy equipment. The control of occupational noise exposures will comply with RRS policies for hearing conservation. All potential noise sources will be evaluated and posted as high noise areas if the sound level exceeds 90 decibels. Hearing protection consisting of either ear plugs or ear muffs will be worn in all posted areas and while operating heavy equipment, regardless of posting. All RRS employees have completed a medical examination which includes them in a hearing conservation program that meets the requirements of 29 CFR 1910.95.

3.2.5 Thermal Stresses

Adverse climate conditions are an important consideration in planning and conducting site operations. The effects of ambient temperature can cause physical discomfort, loss of efficiency, personal injury, and increase the probability of accidents. One or more of the following recommendations will help reduce the risk of heat or cold stress on the job site. The RRS thermal stresses procedure will be followed.

- Provide plenty of liquids to replace loss of body fluids. Water and/or electrolyte drinks will be used for this purpose.

- Establish a work schedule that will provide appropriate rest periods.
- Establish work regimens consistent with American Conference of Governmental Industrial Hygienists (ACGIH) guidelines.
- Wear appropriate protective clothing for adverse weather conditions.
- Provide adequate employee training on the causes of heat and cold stress and preventive measures.

3.2.6 Heavy Equipment

Vehicles and heavy equipment will have a speed limit of 15 miles per hour on the job site, or less if designated by BLP. Drivers and equipment operators will wear seat belts at all times. No riders will be allowed on heavy equipment or in vehicles unless a seat and seat belt are available for their use. Heavy equipment used for demolition will be provided with a cab capable of protecting the operator from falling debris.

3.2.7 Overhead, Tripping and Falling Hazards

The work in the MOA may involve scaffolds and platforms. All elevated work platforms will be kept dry and clear of all unused cords, lines, hoses, tools and other trip hazards. All elevated work platforms will have three rails and toe boards to reduce falling hazards and overhead hazards for personnel at a lower levels. All personnel working over 6 feet will use a harness (not belt) and a lanyard tied off close to the work operation. If personnel have to work away from a tie-off point a fall arrest device is also required.

3.2.8 Electrical hazards, standing water

Water may be needed to control dust emissions. All electric cords will be only be energized on circuits that are protected by ground fault circuit interrupters. Any portable light plants used inside any enclosure will be used in accordance with the manufacturers instructions for wet service and grounding. Standing water will be minimized to the extent possible.

3.2.9 Confined Spaces

Confined space hazards include oxygen deficiency, accumulation of toxic gases, dusts or fumes, difficult access and isolated work areas. All confined space work will be accomplished in accordance the RRS confined space entry procedure found in Appendix B.

3.3 WORK TASK HAZARDS

3.3.1 Mobilization

Chemical: The primary chemical hazard associated with this work task is exposure to lead dust.

Physical: Physical hazards for this work task include head hazards, eye hazards, noise hazards, power tools/electrical hazards, and heavy lifting.

PPE/
Controls: Level D protection unless there is the possibility of raising dust, then level C protection is required. Use fork lifts for handling heavy loads or use 2 people for any lifting over 50 pound or if the load is awkward. Do stretching exercises before lifting and use a belt if desired.

Monitoring: No monitoring is required for this operation.

3.3.2 Asbestos Removal

Chemical: The primary chemical hazard associated with this work task is exposure to asbestos fibers and carbon monoxide if operating internal combustion engines inside buildings.

Physical: Physical hazards for this work task include working at heights, head hazards, eye hazards, noise hazards, power tools/electrical hazards, wet and slippery conditions, and overhead loads.

PPE/
Controls: Level C protection will be used in asbestos removal areas. Asbestos containments will be established for closed work areas. Floors, walls and ceilings will be protected with poly sheeting and ventilation will be established. Glove bags will be used for pipe insulation removal whenever possible. Areas will be posted. GFCIs will be used on all electric powered items in the containment. Fall protection will be provided for workers on platforms over 6' high and also for workers within 10 feet of the roof edge for asbestos roofing removal.

Monitoring: Personal and area asbestos monitoring.

3.3.3 Ore and Concentrates Removal/Contaminated Soil Removal

Chemical: The primary chemical hazard associated with this work task is exposure to lead dust and carbon monoxide if operating internal combustion engines inside buildings.

Physical: Physical hazards for this work task include heavy equipment, head hazards, eye hazards, noise hazards, and overhead loads.

PPE/
Controls: Level C protection is required for this operation.

Monitoring: Lead, arsenic, and cadmium monitoring. Carbon monoxide monitoring if any work with internal combustion engines takes place inside buildings.

3.3.5 Building Washdown

Chemical: The primary chemical hazard associated with this work task is exposure to lead, arsenic and cadmium dust.

Physical: Physical hazards for this work task include slippery conditions, head hazards, eye hazards, and noise hazards, and may include hazards from high pressure washers.

PPE/
Controls: Level C protection with polytyvek coveralls and face shields for pressure washing.

For pressure washers use only 15° or wider spray tips, never spray toward another worker, never put your hand in front of the nozzle, use two hands on the wand when operating the washer, point the engine exhaust outside the building.

Monitoring: Lead and arsenic monitoring. Carbon monoxide monitoring if any work with internal combustion engines takes place inside buildings.

3.3.6 Building Demolition

Chemical: The primary chemical hazard associated with this work task is exposure to lead, arsenic and cadmium dust.

Physical: Physical hazards for this work task include head hazards and eye hazards from falling debris, noise hazards, power tools/electrical hazards, and overhead loads.

PPE/
Controls: Level C protection is required for this operation. Equipment used for demolition will have protective cabs. A spotter/laborer will be used at all times to warn others and assist the equipment operator.

Monitoring: Lead and arsenic monitoring. Carbon monoxide monitoring if any work with internal combustion engines takes place inside buildings.

3.3.4 Support Personnel/Grading/Backfill

Chemical: The primary chemical hazard associated with this work task is exposure to lead, arsenic, and cadmium dust.

Physical: Physical hazards for this work task include head hazards, eye hazards, noise hazards, power tools/electrical hazards, and overhead loads.

PPE/
Controls: Level C protection for support work inside the exclusion zone and level C protection with a half face respirator for support work in the contamination reduction zone.

Monitoring: Lead and arsenic monitoring.

3.4 WORK PERMITS

Many sites have work permit requirements. In addition to permits required by RRS, BLP's site rules pertaining to work permits will be strictly enforced and adhered to.

4.0 MEDICAL SURVEILLANCE

4.1 PURPOSE

The purpose of medical surveillance in the Health and Safety Plan is to provide a uniform medical program that will ensure a healthy work force. This includes the selection of employees physically able to safely perform the work tasks assigned, the monitoring of their health on a regular basis, and providing medical care for occupational injury or illness. This criteria applies to all RRS employees and their subcontractors.

4.2 REQUIREMENTS

4.2.1 Pre-Employment Medical Evaluation

Each prospective employee shall have a pre-employment medical evaluation to determine fitness for the job assignment. The candidate's employment is contingent upon the examining physician's concurrence that the candidate meets the medical criteria established for the job.

4.2.2 Periodic Medical Evaluations

Each employee shall have an annual or biannual medical evaluation to identify incipient disease conditions and to review his overall fitness for work.

4.2.3 Termination Medical Evaluation

Each employee shall be provided with a termination physical examination and medical evaluation prior to leaving employment with RRS. If the terminating employee declines this service, a written letter offering this service shall be sent, via certified mail, to the employee's last known address and a copy of the letter with the certified mail receipt will be retained in the employee's medical file.

4.2.4 Special Medical Examinations or Consultations

Special medical examinations or consultations shall be arranged in emergency situations for all employees who may have been exposed, without adequate protection, to hazardous substances at concentrations above the OSHA Permissible Exposure Limits (PELs). This will be done as soon as possible after the suspected exposure is reported to RRS. A special medical examination will also be arranged upon notification by an employee that he has developed signs or symptoms indicating a possible overexposure to hazardous substances, or if the examining physician determines that more frequent medical examinations are necessary.

Special medical examinations or consultations shall be arranged in accordance the Federal OSHA lead, arsenic and cadmium standards if the respective action levels are

exceeded for over 30 days a year.

4.2.5 Site Medical Services

At least two (2) employees adequately trained in first aid and CPR will be available for each shift during which operations are conducted.

4.2.6 Verification of Physical Examinations

Verification of physical examinations for all employees is required. A copy of the pre-placement and annual physical evaluations will be kept on file.

4.3 PHYSICAL EXAMINATION CATEGORY AND FREQUENCY

The content and frequency of physical examinations is determined by the potential exposure hazard and the type of personnel protective equipment required by the job content.

Category C

Definition: Supervisory and management personnel who use respiratory protection less than thirty (30) days per year, or who are potentially exposed to hazardous substances or health hazards less than thirty (30) days per year.

Example: Project Manager.

Frequency: Pre-placement, in service every two (2) years and termination.

Category D

Definition: Personnel who may potentially be exposed to hazardous substances or health hazards thirty (30) days per year, or who are required to use respiratory protection thirty (30) days per year.

Example: Site Safety Officers, Field Technicians.

Frequency: Pre-placement, in service every year and termination.

4.4 EMPLOYEE NOTIFICATION OF MEDICAL EXAMINATION RESULTS

The local medical provider will review the results of a medical evaluation with the employee. If the examination uncovers a serious health problem, the examining physician may confer with the employee's family physician. If both physicians agree, the family physician may make the notification, but RRS requires assurance that the employee or employee candidate is notified.

4.5 LOCAL MEDICAL PROVIDER

For routine physical examinations and employee qualifications, the following medical provider will be used:

Virginia Mason Occupational Health Clinic
6720 Southcenter Blvd. Suite 110
Tukwila, WA 98188
(206) 242-3651

The emergency medical provider will be:

Shoshone Medical Center
Jacobs Gulch
Kellogg, Idaho 83837
(208) 784-1221

ATTN: Pg 1/3
Paul Swift,
ICF
206-871-5561
Maps you requested
-Sean

5.0 AIR MONITORING

5.1 PERSONAL AIR MONITORING

5.1.1 PURPOSE

The purpose of this air monitoring is to identify and quantify airborne levels of contaminants in the work place in order to determine and verify the level of employee protection required. These air monitoring results will be used to determine appropriate levels of protection and to assess the employees' risk of exposure in any uncontrolled release.

5.1.2 INITIAL AIR MONITORING

Lead , Arsenic, Cadmium, and Zinc

Personnel exposure monitoring for lead, arsenic, cadmium, and zinc will be performed during mobilization and the initial phase of ore and concentrates removal, asbestos removal, building washdown, and demolition operations using NIOSH Sampling and Analytical Method #7082. This will continue until employee exposures are well characterized for each operation.. Employees selected for monitoring will include those with the highest risk of exposure to dust and metals.

Asbestos

Personnel involved in the removal of asbestos containing material will be monitored for airborne fibers throughout the removal operations. Sampling and analysis will be performed using NIOSH method 7400.

5.1.3 ROUTINE AIR MONITORING

After the initial air monitoring, routine monitoring will be done throughout the project. One or two samples per week will be collected to demonstrate compliance with exposure standards. If exposures are above the action level those operations will be monitored. An attempt will be made to monitor all work operations, including those that do not have the highest potential for exposure.

5.1.4 FOLLOW UP MONITORING

If the measured airborne concentrations of lead, arsenic, and cadmium are below the OSHA Action Levels, and the concentrations of dust and other metals are below the action levels or permissible exposure levels, monitoring will be repeated whenever work operations change in a way that could increase the risk of personnel exposures above the published exposure limits. If the measured airborne levels of lead are above 30 ug/m^3, the levels of arsenic are above 5 ug/m^3, the levels of cadmium are above 3

ug/m^3, or the concentrations of dust or other metals are above the permissible exposure levels, monitoring will be repeated daily until all employee exposures have been adequately characterized and additional control measures are in place.

5.1.5 MONITORING AND ANALYTICAL METHODS

Personnel exposure monitoring for dust and metals will be performed using personal sampling pumps and 0.8 micron cellulose ester membrane filters. Pumps will be calibrated before and after each day's sampling activities. A flow rate of 2.0 liters per minute, $\pm$ 5% will be used for sample collection. Samples will be analyzed by a laboratory certified by the American Industrial Hygiene Association for metal analyses.

Asbestos samples will be performed using personal sampling pumps and 25 mm diameter, 0.8 micron cellulose ester membrane filters with conductive cowls. Flowrates will be appropriate to obtain enough air volume to detect fibers at the OSHA action level. Samples will be analyzed using phase contrast microscopy by an AIHA registered asbestos analyst.

5.2 AREA SAMPLING

5.2.1 Asbestos

Asbestos samples will be taken in areas immediately adjacent to the asbestos work areas. If any of the area samples are above 0.1 fibers/cc all abatement work in that area shall stop. The area will be resampled and retested within 24 hours. If the second test results indicate fiber count above 0.1 f/cc additional air and surface cleaning procedures will be initiated to reduce the airborne fiber concentration below this limit.

5.2.2 Respirable Dust

The work area and perimeter of the work areas will be monitored using and MIE Miniram. The Miniram is a direct reading instrument which measures respirable particles in the air. The Miniram will be used in conjunction with personal sample results to determine the appropriate level of protection for site workers. Miniram sampling will be performed at least twice per shift. Work area action levels can be found in section 6.5. The action level for the work area perimeter is 0.15 mg/m^3 of respirable dust above background. This is a very conservative limit which is set at the ambient air quality standard for lead. Since the dust is not 100% lead this action level will protect the local community.

The action levels are based on sustained readings for 3 minutes and are for levels above background, i.e. the difference between the downwind and upwind readings.

5.3 RECORDKEEPING

Personnel air monitoring results will be recorded by the Site Safety Officer and reported to employees and the Project Manager within five (5) days of receiving those results. Direct reading instrument results will be recorded daily. The Project Manager will make the asbestos results available to BLP within 24 hours of sampling and all other results available within 24 hours of receiving the analytical results form the lab. BLP has direct access to RRS's Health and Safety Manager for consultation on air monitoring results.

6.0 PERSONNEL PROTECTIVE EQUIPMENT

6.1 PURPOSE

The purpose of personnel protective equipment (PPE) is to protect employees from potential hazards at the job site.

6.2 DESCRIPTION OF LEVELS OF PROTECTION

Levels of protection have been defined by U.S.EPA in their "Standard Operating Safety Guidelines" (1984). Level A is a totally encapsulating, chemically-protective suit with self-contained breathing apparatus. Level B provides maximum respiratory protection by the use of supplied-air respirators and dermal protection is selected on the basis of anticipated hazards. Level C incorporates an air-purifying respirator, which is specific to the contaminants of concern. The degree of dermal protection depends on anticipated hazards. Level D is basically a work uniform. There are numerous variations and modifications possible with each level.

6.3 PERSONNEL PROTECTIVE EQUIPMENT

Based on the contaminants identified and the concentrations detected by previous sampling and site characterization, this project is expected to require Level C protection for the initial stages. Requirements for upgrading the level of protection are based on 29 CFR 1910 and the protection factors for each type of respirator. Full-face air purifying respirators have a protection factor of 50 times the exposure limit. Powered Air Purifying Respirators have a protection factor of 1000 and positive pressure supplied-air respirators have a protection factor of 2000 times the exposure limit.

6.3.1 Level C Protection

Asbestos removal, ore/concentrates removal, building washdown, contaminated materials loading and demolition activities will require Level C respirators and protective clothing. This will include full-face air-purifying respirators equipped with high-efficiency particulate air (HEPA) filters; safety shoes with steel toes, shanks, and inserts; rubber boot covers; hard hat; hearing protection; Tyvek coveralls; and chemical-resistant gloves. Any activities that involve torch cutting of any materials inside any of the buildings require a PAPR or supplied air respirator. All activities at the Bunker Hill site that have the potential to create any dust require a half face air purifying respirator. If air monitoring results demonstrate that airborne dust or metals concentrations exceed the permissible exposure limits, work with contaminated materials will cease until PPE is upgraded appropriately. Personnel exposure monitoring results that are 50 times the OSHA permissible exposure limit for any of the monitored contaminants, will trigger an upgrade to positive pressure supplied-air respirators (Level B protection). HEPA filters will be changed daily or whenever there is a noticeable increase in breathing resistance, whichever comes first.

6.3.2 Level D Protection

The prescribed minimum protective equipment for most of this project is expected to be Level D. This will include a hard hat, safety glasses with side shield, safety shoes with steel toes, shanks and inserts, work clothes with long-sleeved shirt and long pants, hearing protection in high noise areas, and leather gloves for handling tools and equipment. Chemical resistant gloves, boots and coveralls will be added for activities that pose a skin contact hazard. Personnel exposure monitoring results that are at the OSHA action level for lead, arsenic or cadmium, or at the OSHA permissible exposure limits for any other monitored contaminants; will trigger an upgrade to air-purifying respirators (Level C protection).

6.4 FIT TESTING

Quantitative and qualitative fit tests of air-purifying respirators will be performed on each employee prior to his initial assignment to this project. Fit tests will be performed in accordance with 29 CFR 1910.1025. Employees will be fit tested with the brands and types of respirator actually worn by each individual. Individuals will be allowed to use only those respirators for which they have been trained and fit tested. Fit tests will be repeated every 6 months and whenever an individual's physical condition changes in a way that may affect respirator fit (i.e., surgery, weight gain or loss).

Each time employees don their respirators, they will perform a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

INITIAL LEVELS OF PROTECTION

Work Task	Level of Protection
Mobilization	D
Asbestos Removal	C
Ore/Concentrates Removal	C
Building Washdown	C
Building Demolition	C
Contaminated material loading and transportation	C
Support zone/backfill and final grade	D

6.5 WORK AREA AIR MONITORING

Dust

Work areas will monitored using and MIE MINIRAM Model PDM-3 aerosol monitor. The monitor will be zeroed and operated in accordance with the manufacturers instructions. Work areas will be monitored in conjunction with the perimeter area monitoring described in Section 5 of the work plan. The following airborne dust levels will be used to determine the minimum level of protection required.

AIRBORNE DUST LEVELS FOR
DETERMINING MINIMUM LEVELS OF PROTECTION
as measured with the
MiE MINIRAM Model PDM-3

Dust Level	Minimum Level of Protection	Engineering Control Alternatives
Above 1.25 mg/m^3	Level B	- Water Mist - Stop Work - Modify Work Practices
0.25 - 1.25 mg/m^3	Level C - Full Face	-
Water Mist		
0.025 - 0.25 mg/m^3	Level C - Half Face	- Water Mist
Up to 0.025 mg/m^3	Level D	

7.0 WORK ZONES AND DECONTAMINATION PROCEDURES

7.1 PURPOSE

Job sites must be controlled to reduce the potential for chemical exposures and to prevent the spread of contamination.

7.2 CONTROL

The possibility of exposure or spread of contamination can be reduced or eliminated in a number of ways, including:

- Setting security or physical barriers to exclude unnecessary personnel from the work area;
- Minimizing the numbers of personnel and equipment on site consistent with effective operations;
- Establishing work zones within the job site;
- Using work practices that will reduce the exposure of personnel and equipment;
- Minimizing the airborne dispersion of contaminants (utilizing dust control procedures); and
- Implementing appropriate decontamination procedures for both equipment and personnel.

7.3 FIELD OPERATIONS WORK AREAS

Upon arrival at the job site, work areas or zones will be established based on anticipated contamination. Within these zones, prescribed operations will occur utilizing appropriate personnel protective equipment. Movement between areas will be controlled at checkpoints. The planned zones are:

- Exclusion Zone (contaminated),
- Contamination Reduction Zone (decontamination), and
- Support Zone (clean).

7.3.1 Exclusion Zones

The Exclusion Zones are considered contaminated, dirty or "hot". Within these areas, the prescribed PPE for each work operation must be worn. An entry checkpoint will be established at the periphery of the Exclusion Zone to control the flow of personnel and equipment between contiguous zones, and to ensure that the procedures established for entry and exit are followed.

The Exclusion Zone boundary will be established initially based on the presence of the contaminants within the area. This boundary may be adjusted later, based on

observations and employee exposure monitoring. The boundary will be physically marked.

This decontamination project may have several Exclusion Zones set up concurrently. The full decontamination procedures will be followed whenever anyone leaves any of the exclusion zones set up during the project. This includes travelling between noncontiguous exclusion zones.

7.3.2 Contamination Reduction Zone

Between the Exclusion Zones and the Support Zone is the Contamination Reduction Zone. The purpose of this zone is to prevent or reduce the transfer of contaminants that may be present on personnel or equipment returning from the Exclusion Zone. All decontamination activities occur in this area. The boundary between the Support Zone and the Contamination Reduction Zone is the contamination control line. This boundary separates the potentially contaminated areas from the clean area. Entry into the Contamination Reduction Zone from the clean area will be through an access control point. Personnel entering at this station will be wearing the prescribed personnel protective equipment for working in the Contamination Reduction Zone. Exiting the Contamination Reduction Zone to the clean area requires the removal of any suspected or known contaminated personnel protective equipment and compliance with decontamination procedures.

7.3.3 Support Zone

The Support Zone is considered an uncontaminated, or clean, area. It contains the command post for field operations and other elements necessary to support site activities. Normal street clothing is appropriate within this zone.

7.4 ZONE DIMENSIONS

Considerable judgement is needed to ensure safe working distances for each zone, balanced against practical work considerations. Physical and topographical barriers may limit ideal locations. Field/laboratory measurements combined with weather conditions can assist in establishing the control zone distances. When working in areas not requiring personnel protective equipment, zones may still be needed to limit the movement of personnel and retain adequate site control.

7.5 DECONTAMINATION PROCEDURES

7.5.1 Introduction

As part of the system to prevent or reduce the physical transfer of contaminants, procedures will be implemented for decontaminating anything leaving the Exclusion Zones and Contamination Reduction Zone. These procedures include decontamination of

personnel, protective equipment, monitoring equipment, decon equipment, etc. Unless otherwise demonstrated, everything leaving the Exclusion Zones should be considered contaminated and appropriate methods established for decontamination. In general, decontamination at the site consists of rinsing equipment, personnel, etc., with copious amounts of water and washing with detergent and water solution. Reusable, decontaminated, personnel protective equipment will be stored for air drying. Only potable water may be used for personnel decontamination.

Decontamination is addressed in two ways: the physical arrangement and control of contamination zones, and effective use of decontamination procedures.

The decontamination process PPE uses cleaning solutions, followed by rinse solutions. Used solution, brushes, sponges and containers must be properly disposed of as contaminated wastes.

7.5.2 Decontamination Solutions for Non-Disposable PPE

Solution	Description	Usage
A	Alkonox mixed per manufacturer's recommendations	Light contamination
B	Commercial detergent	Organic contamination

A water rinse will be used to remove cleaning solutions.

As with all alkaline cleaners, continuous or repeated contact with skin should be avoided. If an employee's skin becomes contaminated, he will immediately remove contaminated clothing and wash or shower with water for at least fifteen (15) minutes. He will see the local medical provider for evaluation and possible medical treatment immediately after showering.

All personnel required to wear protective clothing will follow these decontamination procedures:

1. When leaving the Exclusion Zones, remove heavy soil by brushing or scraping and rinsing with water at the Contamination Reduction Zone.
2. Step into the decontamination tub and clean boots and gloves.
3. Step into the rinse tub and rinse boots and gloves.
4. Remove taping at wrists and ankles, disposable coveralls and outer gloves, discarding them in contaminated waste disposal containers.
5. Remove and wash respirator and hard hat.

6. Remove inner gloves and discard in contaminated waste container.
7. Wash hands and face, shower as soon as possible after leaving the work area.
8. Decontaminate your respirator in wavicide solution and hang to dry. If your respirator is not used the following day, store it in a clean plastic bag.
9. Thoroughly wash hands and face before eating, drinking, or smoking and shower before leaving the site.

Decontamination procedures may be modified as necessary, with the consent of the Project Manager and the RRS Health and Safety Manager.

All employees will be thoroughly briefed on decontamination procedures.

7.6 PERSONNEL DECONTAMINATION DURING MEDICAL EMERGENCIES

In the event of personal injury, first aid personnel must decide if the victim's injuries are life-threatening or could be aggravated by movement. When in doubt, or if the victim is unconscious, no attempt should be made to move him until emergency medical personnel arrive. If the victim is conscious and it is reasonably possible, his personnel protective equipment will be washed and removed before transporting him to the hospital. If this is not practical, the victim should be wrapped in a tarp or plastic sheeting to protect the ambulance during transport.

7.7 VEHICLE DECONTAMINATION

The existing site vehicle decontamination station will be used whenever possible. If an alternate decontamination station is needed it will be constructed in accordance with the RRS Standard Procedure found in Appendix C, or as approved by BLP. Contaminated vehicles and equipment will be cleaned either by dry brooming or with detergent and water or high pressure water washers prior to leaving the job site. All cleaning solutions must be collected for proper disposal as contaminated waste.

8.0 RECORDKEEPING AND REPORTING

8.1 PURPOSE

This section describes procedures for reporting and recording accidents and injuries. It also defines requirements for employee access to medical and exposure monitoring files.

8.2 ACCIDENT AND INJURY REPORTS

All accidents and injuries must be immediately reported to the RRS Project Manager. A RRS accident or injury report will be completed and submitted to the RRS Health and Safety Manager as required by Appendix A. The Project Manager is responsible for notifying BLP of any accidents or injuries at the work site.

8.3 OSHA REPORTS

OSHA recordable injuries and illnesses will be included on an OSHA 200 log maintained at the project site and at the RRS office in Fremont, California. Each recordable incident will be entered in the log within six (6) days of its occurrence. A new OSHA 200 log will be started at the beginning of each calendar year. Logs will be retained for five years after their completion. RRS Supervisor's Accident Reports will be retained as supplemental records for the same time period.

8.4 MEDICAL EVALUATION RECORDS

Records of employee medical evaluations and any biological monitoring will be stored by the examining physician for at least thirty (30) years following the affected employee's termination of work with RRS. Access to these records is restricted to the affected employee, unless the employee gives his express written consent to other access. RRS will receive and retain only the physician's written opinion of the employee's fitness to work.

9.0 TRAINING

9.1 PURPOSE

Employee training is intended to ensure safe work practices and protection of personnel and property.

9.2 STRUCTURE

RRS employees will receive health and safety training prior to working on the job site. The training program will fulfill all requirements set forth in Oregon State Department of Labor and Industries standards and federal OSHA standards for construction and general industries, including applicable hazardous waste regulations.

Hazardous waste workers will receive at least forty (40) hours of health and safety training before they are allowed to work on site. At least eight (8) hours of annual refresher training will be presented thereafter. In addition, daily crew meetings will be held prior to work commencement to discuss safety concerns and changes in work or procedures.

9.3 METHODS

Materials and information will be presented by the Site Safety Officer, the RRS Health and Safety Manager, or other qualified trainers. Training will consist of classroom lectures, field exercises, and written or oral performance evaluations. The bulk of the training information will be presented in lecture form. If the training involves skills or procedures requiring practice, lectures will be supplemented by field exercises.

Evaluations of employee performance will be conducted at the end of every training session. These may be in the form of written tests or the instructor's observation of skills performed.

Written records of training will be stored in each employee's RRS training file.

9.4 TRAINING CONTENT

Training topics include, but are not limited to, the following subjects:

- Hazard communication,
- Chemical and physical hazard awareness,
- OSHA lead standards and lead hazard controls,
- Safe work practices,
- Personnel protective clothing,
- Respirators,
- Hearing conservation,
- Employee rights and responsibilities,

- Emergency procedures,
- Decontamination procedures,
- Site specific safety rules, and
- Review of the job site owner's safety rules and procedures.

10.0 SITE SECURITY

10.1 ACCESS

Job site access will be limited to authorized employees and visitors only. RRS will comply with BLP's site specific procedures for entry and access to the work area. Authorized employees and visitors include personnel who 1) are approved by the RRS project manager and the BLP on-site representative; 2) have a need to enter the job site, and 3) have read the Health and Safety Plan and have signed the acknowledgement form.

10.2 RRS EMPLOYEES AND CONTRACTORS

RRS employees and contractors will be logged in upon arrival at the work site each work shift. They will also be logged out at the end of each work shift. These logs will become part of the RRS project file.

10.3 VISITORS AND REGULATORY AGENCIES

Visitors and individuals representing government regulatory will be logged in and out of the job site for each visit. In accordance with state and federal OSHA requirements, visitors and regulatory representatives who enter the Contamination Reduction or Exclusion Zones will have documentation of appropriate training and medical clearances and appropriate personnel protective equipment. All visitors will be escorted by a RRS or BLP representative in order to ensure their safety on the job site.

11.0 CONTINGENCY PLAN

11.1 PURPOSE

The Contingency Plan sets forth an approved course of action to be taken in the event of an emergency. It defines guidelines for responsibility, agency contacts, communication systems, emergency response and reporting procedures that are essential to ensure that appropriate and timely action is taken. It applies to all RRS employees, contractors, and visitors at the work site.

11.2 RESPONSIBILITIES

Rust has primary responsibility for responding to and correcting emergency situations. This encompasses taking appropriate action including activating the Contingency Plan and notifying appropriate agencies of the potential need for their involvement to ensure the safety of site personnel and the public. Rust is additionally responsible for ensuring that corrective measures have been implemented and follow-up reports completed.

Critical responsibilities are assigned to specific positions in the Contingency Plan. On-site personnel will fulfill these responsibilities in an emergency.

The Emergency Coordinator (EC) will assess conditions, direct emergency actions, and notify RRS, BLP representatives, government agencies, and emergency medical services, as required. He will designate specific employees to perform fire and spill control, as necessary. The Project Manager is designated as the Emergency Coordinator.

In the event of an evacuation, all employees will move to an upwind assembly area via the closest emergency exit. The Personnel Coordinator (PC) will perform a head count at the assembly area and report any missing persons to the EC. The Project Coordinator (supervisor) is designated as the Personnel Coordinator.

The Casualty Control Officer is responsible for obtaining first aid and medical treatment for any injured employees. He will report all injuries to the EC. The SSO is designated as the Casualty Control Officer. Employees trained in first aid and CPR will assist the Casualty Control Officer.

11.3 GOVERNMENT AGENCIES/EMERGENCY SERVICES

As part of the mobilization process, RRS will attempt to make arrangements, as appropriate for the type of material handled at the project, with the local police, fire department, and hospital. These arrangements will be documented and kept in the health and safety plan. Copies of the contingency plan will also be submitted to the organizations which may be called upon to provide emergency services. A list of these agencies and their phone numbers will be posted at the work site.

To activate the emergency services system call:

911

The emergency medical provider is:

Shoshone Medical Center

Maps to the medical facility will be posted on site before work may begin.

11.4 SITE CONTROL

Personnel and vehicle access to the work site will be restricted to one area. Alternate exits will be clearly marked for use in emergencies. An area map will be posted at the work site showing all emergency exits and the location of emergency equipment and supplies.

All personnel will comply with BLP security and site access procedures. The EC will immediately notify RRS and BLP of any unauthorized access.

11.5 EMERGENCY CONDITIONS

Hazard recognition is an essential part of the Contingency Plan. Initiation of the Contingency Plan relies on the employee's ability to recognize an emergency situation. The following is a list of events that will immediately trigger emergency procedures:

- Explosion,
- Fire,
- Spill or release of hazardous chemicals,
- Personal injury,
- Failure of liquid containment systems, or
- Natural disasters; lightning, high winds, earthquakes, volcanic eruptions.

11.6 COMMUNICATIONS

Four (4) methods of emergency communications will be used; hand signals, air horns, radios, and telephones.

Hands clasped on opposite wrists above the head will indicate to personnel to stop work and leave the Exclusion Zones. Hands on throat indicates inability to breath. Thumbs up indicates O.K.

Airhorns will be carried by personnel entering the Exclusion Zones. If the air horns fail, vehicle horns can be used as a substitute. Air horns will be the primary alarm system.

The following signals will be used:

One long blast:	Evacuate by nearest exit, proceed to assembly area, and wait for instructions.
Two short blasts:	Localized problem. Report to supervisor and render assistance as necessary.
Three short blasts:	All clear, resume work.

Employees will also be trained on BLP's alarm signals and emergency procedures before on-site work begins.

Telephones will be used to notify RRS management, BLP, and government agencies, as appropriate.

Two way radios will be used by all personnel for all site communications as well as for emergency contact of site supervision

11.7 EMERGENCY RESPONSE PROCEDURES

Site personnel will respond to incidents that can be mitigated through application of standard mitigation/control measures available on site. Follow-up reporting will be made to appropriate authorities. If an incident on site becomes uncontrolled, or is in excess of on-site capabilities, local Emergency Response Teams will supervise and correct the emergency situation.

11.7.1 EMERGENCY ASSESSMENT

The initial assessment of emergency events will be made by on-site personnel. The alarm system (air horns) will be used to notify other RRS personnel.

As soon as the alarm system is activated, the EC will be notified that an emergency situation exists. The EC is then responsible for directing response activities based on the following information:

- Nature of the emergency,
- Wind direction,
- Location of personnel,
- Emergency equipment available,
- Potential off-site exposures, and
- Outside assistance required.

The EC will also direct remedial action to restore the job site to full operation after the emergency has been controlled.

11.7.2 EVACUATION ROUTES AND PROCEDURES

If the site must be evacuated:

(1) Site radios, portable air horns, and/or hand signals will be used to alert ALL site personnel of an evacuation emergency. Personnel will gather at the primary or secondary meeting area. A head count will be completed by the Personnel Coordinator at the meeting area. A map showing emergency escape routes and primary and secondary meeting areas will be posted on site for each work area.

(2) Normal traffic flow patterns will be in effect unless a local detour is required.

11.7.3 EMERGENCY SECURITY AND CONTROL

Following an Emergency Alarm signal, access to the site and immediate vicinity of the incident will be restricted. Depending upon the severity and location of the incident, physical barriers or banner guard will be used to delineate restricted areas. Site Control will be the responsibility of the Emergency Coordinator who will establish the new work area boundaries if necessary. Future entries into restricted areas will require permission from the Project Coordinator and Project Manager.

11.7.4 EMERGENCY DECONTAMINATION PROCEDURES

In the event of personal injury, first aid personnel must decide if the victim's injuries are life-threatening or could be aggravated by movement. When in doubt, or if the victim is unconscious, no attempt should be made to move him until emergency medical personnel arrive. If the victim is conscious and it is reasonably possible, his personnel protective equipment will be washed and removed before transporting him to the hospital. If this is not practical, the victim should be wrapped in a tarp or plastic sheeting to protect the ambulance during transport.

11.7.5 MEDICAL EMERGENCIES

In the event of a medical emergency, the following procedures shall be implemented:

1. Call 911.
2. Identify location, request medical assistance, provide name and telephone number.
3. Request assistance from emergency medical service and/or additional assistance.

Any person who becomes ill or injured in the Exclusion Zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket). First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must be reported immediately to the Project Manager.

Any person being transported to a clinic or hospital for treatment for exposure should take with them information on any chemical(s) they may have been exposed to at the site. The directions to the hospital are found in the Site Health and Safety Plan.

11.7.6 FIRE OR EXPLOSION

In the event of a fire or explosion, the fire department will be summoned immediately. This will occur concurrently with evacuation of appropriate personnel and accounting for personnel. Upon arrival of the fire department, the Project Manager and/or SSO will advise the fire commander of the location, nature, and identification of the hazardous materials on site. Providing it can be done safely, site personnel may:

- Use fire extinguishers available on site to control or extinguish a small localized fire.
- Remove or isolate flammable or other hazardous materials that may contribute to the fire.
- Begin containment and recovery of any spilled materials.

The Rust Project Manager will determine in the interim whether corrective action may be attempted. Corrective action may only be attempted if personnel are adequately trained and it can be accomplished safely. Portable fire extinguishers of a sufficient number and appropriate type for potential fires will be kept on site and maintained according to applicable regulations and codes.

11.7.8 RELEASES OF HAZARDOUS MATERIALS AIR, SOIL, AND WATER

In the event of a release of hazardous materials to air, soil, and/or water, site personnel will:

Small Release

(1) Rescue injured personnel, if possible/necessary
(2) Identify potential hazards

   (a) Materials involved
   (b) Location
   (c) Migration off-site

(3) Evacuate Area, if necessary

(4) Notify Supervisor

(5) Notify Site Health and Safety Manager

(6) Control and contain spill/release using dikes, berms, spill kits, etc., as authorized by Site Health and Safety Manager

(7) Verbally notify emergency agencies, if necessary

(8) Manage any clean-up debris as required by applicable rules and regulations

Large Release

(1) Rescue injured personnel, if possible/necessary

(2) Identify potential hazards

   (a) Materials involved
   (b) Location
   (c) Migration off-site

(3) Evacuate Area, if necessary

(4) Notify Supervisor

(5) Notify Emergency Coordinator

(6) Notify Emergency Services (911), if necessary

(7) Evacuate facility, if required

(8) Control and contain spill/release using dikes, berms, spill kits, etc., as authorized by Site Health and Safety Manager

(9) Verbally notify agencies, if necessary

(10) Manage any clean-up debris as required by applicable rules and regulations

(11) Complete an incident report and forward to Project Manager and Health and Safety Manager

(12) Conduct a formal critique of the incident and associated action which result in a written report including recommendations for improvement.

11.7.9 EARTHQUAKES

The actual earth movement of an earthquake is seldom the direct cause of injury or death. Most casualties are caused by falling debris from collapsing buildings and other structures, and by fires caused by broken gas mains, etc.

During an Earthquake

1. Remain calm and do not panic.

2. If caught indoors, remain indoors. Take cover under a desk or table or against inside walls or doorways. Stay away from windows and outside doors.

3. Do not use or do anything that might be a source of ignition, i.e. smoking, cutting, welding, etc.

4. If caught outdoors, move away from buildings, and overhead utility lines.

5. If in a moving vehicle, stop as quickly as safety permits, but stay in the vehicle. When you drive after the earthquake, watch carefully for hazards created by the earthquake, i.e. undermined roads, weak bridges or overpasses, etc.

After the Earthquake

1. Check for injuries. Do not move seriously injured personnel unless remaining where they are would create danger of further injury.

2. Check utility lines for damage. Switch off power, water, and gas until a utility official has inspected the building and determined it is safe.

3. Stay out of severely damaged buildings. After shocks are common and may cause their collapse.

4. Assist emergency personnel, if requested, but don't go sightseeing.

5. Be prepared for after shocks which may occur hours or days later.

11.8 EMERGENCY EQUIPMENT

On-site emergency response equipment will include materials used during routine operations and reserved items stored in strategic areas of the job site. The location of emergency equipment will be indicated on site drawings and discussed with site personnel during site indoctrination training and periodically in safety briefings. The following emergency equipment will be available on site:

A phone system will be available on site that is capable of contacting outside emergency services. The phone will generally be located in the administrative office, but may also consist of a mobile phone, located in a site vehicle. Portable radios will be used for on site communication and will be carried by key personnel.

Portable fire extinguishers appropriate for fighting small fires will be located in the personnel trailers, contamination reduction zones, and heavy equipment.

A spill control kit will be located at the site support area. The spill kit will be capable of cleaning up spills of solid waste and small liquid spills (less than 5 gallons). The kit will contain shovels and spill cleanup material (i.e. absorbent).

First aid kits capable of treating minor injuries (i.e. cuts and abrasions) will be located in the personnel trailer and/or the contamination reduction zone.

Portable safety shower/eyewash station,

Tarps/blankets to reduce spread of contamination when transporting injured personnel,

Wind socks or other device to indicate wind direction,

11.9 TRAINING

All employees will have a thorough understanding of this Contingency Plan and BLP emergency procedures before work begins at the job site. During the initial site indoctrination training and the site briefings held periodically, all employees will be trained in and reminded of provisions of this emergency response plan, the communication systems, and evacuation routes. The plan will be reviewed and revised, if necessary, by the Site Safety Officer (SSO) in order to ensure that it is adequate and up-to-date with prevailing site conditions. Any changes to the plan will be approved by RRS regional management.

RUST REMEDIAL SERVICES INC.

INJURY & ILLNESS PREVENTION PROGRAM

Rust Remedial Services Inc.
4245 Technology Drive
Fremont, California 94538

(510) 770-0575

INJURY & ILLNESS PREVENTION PROGRAM

Rust Remedial Services Inc.
4245 Technology Drive
Fremont, California 94538

(510) 770-0575

Approved: _____ 2/8/94
Victor Hutcheson — Date
Vice President & General Manager

Approved: _____ 2-7-94
August Ochabauer — Date
Regional Operations Manager

Approved: _____ 1/12/94
William Hetrick, CIH — Date
Regional Health & Safety Manager

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INTRODUCTION

RUST Remedial Services Inc. is committed to preventing accidental loss of resources and assets which affect our employees and our profitability. In order to eliminate foreseeable hazards and maintain a safe and healthful work environment, it is management's responsibility to provide the opportunity and conditions which ensure safe work practices.

The Injury and Illness Prevention Program outlined in this document holds all levels of management responsible for loss prevention. It identifies:

- The personnel responsible for implementing the program at each facility;
- Methods of identifying health and safety hazards;
- Methods of preventing injury through safe work practices;
- Accident investigation requirements, inspections and procedures to correct deficiencies;
- The Health & Safety training requirements which must be satisfied;
- Communication methods to alert and inform employees of issues which affect their health and safety; and
- Documentation and recordkeeping requirements.

The elements of this program are reflective of good safety management principals and are a consolidation of various procedures found in the RUST Remedial Services' Health & Safety Policy & Procedures Manual, current project practices and standard operating procedures. Compliance with the requirements of this program will ensure compliance with both company policy and state and federal OSHA requirements which mandate a written injury and illness (accident) prevention program.

I. GENERAL INFORMATION & RESPONSIBILITY

The implementation of the RUST Remedial Services (RRS) Injury & Illness Prevention Plan (IIPP) is to be completed at each project site through the Site Project Manager. The Site Project Manager is responsible for health, safety, and regulatory compliance and is assisted by the site Health & Safety Officer and other personnel, such as the Project Coordinator and Project Supervisors, in the execution of the Work Plan and the site Health & Safety Plan.

Since RRS is primarily involved in hazardous waste site remediation activities, much of the project work is guided by compliance requirements found in 29 CFR 1910.120 and 8 CCR 5192. All RRS personnel are expected to work responsibly and comply not only with the site (Project) Health & Safety Plan, but also with the IIPP. A copy of this plan is required to be available to all employees at each project work site.

The authority and responsibility to ensure that all project sites are complying with the IIPP and that Project Managers have the necessary resources to maintain safe working conditions is provided by the Regional Vice President and General Manager of Operations, the Regional Operations Manager responsible for project (contract) execution and the Regional Health & Safety Manager responsible for compliance with company and regulatory agency requirements. All three personnel are located at the Western Region Headquarters:

RUST Remedial Services Inc.
4245 Technology Drive
Fremont, CA 94538

and can be contacted at (510) 770-0575.

Victor Hutcheson	Vice President & General Manager
August Ochabauer	Operations Manager
William Hetrick, CIH	Health & Safety Manager

In addition, the Regional Health & Safety Manager is responsible for maintaining the IIPP and updating it as require by new regulations or company policy so that Project Management is advised in a timely manner of Health & Safety policy issues and what action may be necessary to be taken.

II. METHODS FOR IDENTIFYING HEALTH AND SAFETY HAZARDS

A. The following methods will be used to identify health and safety hazards at each RUST Remedial Services' Project site:

1. Semi-annual Regional Health and Safety review conducted by:

   a. V.P. Operations, Western Region

   b. Health & Safety Manager, Western Region

   c. Operations Manager, Western Region

2. Quarterly Health and Safety audit conducted by:

   a. Health & Safety Manager, Western Region (Appendix A) outlines the content of the quarterly audit.)

3. Weekly Project Health and Safety inspection (Appendix B outlines the content of the Weekly Inspection Form) which may be conducted by one or all of the following:

   a. Safety Committee Member(s)

   b. Health & Safety Officer

   c. Project Operations Management or Supervision

   d. Facility Employee Representative(s).

4. Health and Safety Committee meeting and Employee Safety meetings are the responsibility of the Project Manager to schedule and conduct. (Appendix C is the procedure for conducting Health & Safety committee meetings.)

5. A Health & Safety Job Safety Analysis conducted by either or both Project operations management or supervision and the Site Health & Safety Officer. (Appendix D is the procedure for conducting Health & Safety Job Safety Analysis.)

   a. Job Safety Analyses are to be conducted on projects, tasks or assigned work which are not routine assignments and for which the hazards of the job may not be readily apparent or predictable.

b. A Process Safety Review may also be required in order to focus on chemical process hazards which may result from project operations at which chemical use or process equipment could result in an uncontrolled reaction, emissions, fire, explosion or release to the surrounding environment. (Appendix E is the procedure for conducting a Health & Safety Process Safety Review.)

6. A daily Health & Safety Job Safety Briefing conducted by either or both project operations/management or supervision and the Site Health & Safety Officer. All project employees and supervision are required to attend these meetings.

7. A Health & Safety Standard Operating Procedure (H&S SOP) may be required of various tasks, equipment operation or projects. H&S SOP's may be prepared by any individual with responsibility and familiarity of the project at issue but they must be approved by the Regional Operations Manager and the Regional Health & Safety.

8. Information which is obtained from Accident Investigation together with analysis of worker's compensation data and OSHA accident frequency and severity calculations are reviewed immediately upon receipt by facility management, and the Regional Health & Safety Manager.

   a. Appendix F is the Health and Safety Procedure which specifies accident investigation responsibilities & requirements.

   b. Information on work related injuries is utilized in emphasizing:

      1) Corrective measures to be taken;

      2) retraining or training that can be expanded upon;

      3) a review or initiation of a Job Hazard Analysis;

      4) a review of Job Safety Briefings conducted;

      5) A H&S SOP which may be needed.

9. Employees may contribute any input, concerns or information related to workplace hazards by:

   a. communication to or participation in safety committee activities as wells as by direct written suggestion (anonymous or signed) to the Health & Safety suggestion mailbox;

   b. by direction communication with Project management or supervision;
   and

   c. by direct communication to Regional Management in the Fremont, California Regional Office.

NAME	WORK PHONE	HOME PHONE
Vic Hutcheson, V.P. Operations	(510) 249-4605	(b) (6)
August Ochabauer, Mgr Operations	(510) 249-4604	
Bill Hetrick, Mgr Health & Safety	(510) 249-4610	
Jim Bushnell, Project H&S Mgr	(206) 575-3930	
Brad Walker, Project H&S Mgr	(510) 249-4673	

10. Project audits are conducted by the Corporate Audit Team and these audits are unannounced health, safety and environmental inspections. These audit results are also a basis for identification of project hazards with recommendations for correction or improvement.

III. METHODS OF PREVENTING INJURY

A. Safe work practices, standard operating procedures and site (facility) safety rules are to be provided to employees:

1. Health & Safety Rules and Safe Work Practices (Appendix G) are to be provided to all employees when hired and before job assignment.

2. All employees must complete the required health and safety site specific training applicable to their job assignment prior to beginning work.

3. All employees must complete review of emergency procedures, reporting of accidents or incidents, substance abuse, bloodborne pathogen training as well as location, use and maintenance of personal protective equipment prior to their beginning work.

B. The impetus behind the above procedures is based on and supported by a collection of corporate health and safety beliefs, principles and policy, included in Figures III-1, III-2, and III-3 respectively. These corporate policies are to be enforced on a project level, and will be posted at conspicuous locations for employee reference. Employees will also be trained in accordance with their contents, and will fully comply with them, when performing their specific work tasks.

FIGURE III-1

HEALTH AND SAFETY BELIEFS

1. All injuries and illnesses can be prevented.

2. It is ethically right and good business to prevent injuries and illnesses.

3. The full cooperation of each employee is required to achieve Health and Safety excellence.

4. Safety is an integral part of a management process rather than something managed separately.

5. Safety is a process, not a program. The critical subprocesses are:

   - Risk Assessment
   - Training
   - Planning
   - Communications
   - Implementation
   - Investigation
   - Auditing and Measuring

6. Incidents, injuries and illnesses are symptoms of deficiencies in the Health and Safety management process.

7. There is no one right way to achieve Health and Safety in an organization. However, for a Health and Safety process to be effective, it must:

   - Have top management involvement, visibility and commitment.
   - Require line organization responsibility and accountability.
   - Have middle management involvement.
   - Have employee participation.
   - Be flexible and proactive.
   - Be perceived as positive.
   - Have continuing reinforcement and emphasis.

8. A key to attaining Health and Safety excellence is assigning clear line accountability.

9. The role of the Health and Safety professional is to assist the line organization in fulfilling their responsibilities.

10. Health and safety performance is a major yardstick of management's performance.

11. Improving the Health and Safety process is the way to improve the health and Safety results.

12. Discipline must be exercised when warranted, and disciplinary actions must be consistent and predictable if they are to be effective.

13. Leadership conducting work place audits is critical to communicating acceptable standards.

14. Failing to correct actually condones and reinforces a practice.

15. Word class Health, Safety and Environmental performance is essential to our business success and growth.

FIGURE III-2

HEALTH AND SAFETY PRINCIPLES

1. All injuries and illnesses can be prevented.

2. Health, Safety and Environmental performance always come before profits.

3. The line organization is directly responsible and accountable for preventing injuries, illnesses and incidents.

4. Health, Safety and Environmental compliance is a condition of employment for all employees.

5. Health, Safety and Environmental work place audits must be conducted, and all deficiencies must be corrected promptly.

6. Management will provide the necessary resources to meet our Health, Safety and Environmental objectives.

7. We will only use contractors with a demonstrated commitment to Health and Safety.

8. We will investigate accidents and incidents, then share and institutionalize the key learnings.

9. We will hold our contractors to the same Health, Safety and Environmental standards as we hold ourselves.

FIGURE III-3

RUST INTERNATIONAL INC.
HEALTH AND SAFETY POLICY

Rust International Inc. is committed to conducting our operations in a way that protects people, property, communities and the environment. We believe all injuries and occupational illnesses can be prevented; however, the full cooperation of each employee is required to achieve this goal. Health, Safety and Regulatory Compliance are more important than profits and are integral parts of our total management process. The following principles form the foundation for our approach to Health and Safety:

- Each employee is responsible for Health, Safety and compliance with company procedures as a condition of employment.
- Each employee has the right and duty to question the adequacy of Health and Safety provisions.
- The line organization is responsible and accountable for preventing injuries, illnesses, incidents and for Regulatory Compliance.
- Management shall provide the necessary resources and training to meet our Health, Safety and Regulatory Compliance objectives.
- We shall proactively identify workplace deficiencies and take corrective action.
- We shall employ contractors who are committed to Health, Safety and Regulatory Compliance and will hold them to the same standards as ourselves.
- We shall investigate accidents and incidents, then share and institutionalize the key learnings.

Our most valuable asset is our people; as such, they must be protected. Attaining our objective of world-class Health and Safety performance requires more than regulatory compliance alone. We will continuously work to improve our performance through management involvement, employee participation and proactive approaches. Rust management endorses these beliefs and principles and will demonstrate our commitment through actions.

Rodney C. Gilbert
President and Chief Executive Officer
Rust International Inc.

Scott T. Baker
President
Rust Remedial Services Inc.

January 1, 1994

IV. ACCIDENT INVESTIGATION AND INSPECTIONS

A. Investigation and inspection procedures, as outlined in Section II.A.8 may require follow-up:

1. Where it is clear that a dangerous condition must be acted upon immediately, the facility management must alert Health & Safety with respect to the action taken or cause for concern.

2. If project management and/or Health & Safety cannot satisfactorily resolve the issue they are obligated to alert the V.P. of operations, Western Region for assistance or resources to resolve the issue.

B. The Project Manager has the authority and responsibility for correcting deficiencies and safety hazards identified by inspections or from accident investigations.

1. The Project Manager has the responsibility to alert affected employees of a safety hazard which, once identified, may result in a serious concealed danger if its existence were not otherwise noted.

2. All reasonable efforts shall be made by Project Management to abate recognized hazards as soon as possible including documenting that such action has been taken.

a. Corrective action taken is to be stated on the Supervisor's Report of Injury Form where first aid/near miss/or recordable injuries are reported and signed by the Project Manager.

b. Other inspections, audits and investigations must be addressed and the relevant action taken so indicated.

V. TRAINING

A. All employees are obligated to participate and satisfactorily meet the criteria specified in the training matrix shown in Appendix H titled Health & Safety Training Requirements.

1. The applicable requirements for most employees (new hires) specify general health and safety training prior to beginning work as well as other specific instruction, e.g., confined space training.

2. Site specific training must be completed prior to beginning work or new job assignment (or change in existing job assignment). Site specific training may require input from Health & Safety. Project site management is responsible to alert Health & Safety of any changes contrary to accepted practice or SOP (e.g. modifying personal protective equipment which had been specified by Health & Safety).

B. Copies of all training records and documentation of attendance, performance and records of training certificates issued must be maintained at the facility which employees the employee. Regional Health & Safety also retains a complete copy of those records generated during the course of an employees training.

VI. COMMUNICATION METHODS

A. The Site Project Staff are the principal communicators to project employees and required to meet no less than once a month. Minutes of the committee meeting which focus on H&S issues should be communicated to employees no later than one week following the date of the meeting and should include the following:

1. Results of inspections and action taken or intended;

2. Comments/concerns/conditions which employees have reported either to the committee, operations management or Health & Safety;

3. Follow-up on accident investigations which resulted in injury or illness;

4. Evaluation of safety suggestions;

5. Reports of violations or citations issued from a Health & Safety inspector (e.g. CAL-OSHA, customer representative, company audit, etc.) and corrective action taken.

B. Employee Safety meetings are separate and distinct events from the Project Staff Committee meetings. Employee Safety Meetings may address subjects discussed at the Safety Committee meetings but are not intended to be solely a "report" of the Safety Committee activities. One of the communication benefits to be derived from the Employee Safety Meetings should include an opportunity for suggestions and discussion on concerns which may need follow-up action.

C. The Incentive Program utilized by the Western Region provides a monthly award to those employees who work injury free for each month. The program is administered by the Operations Group Administrative Assistant.

1. Each monthly incentive is accompanied by an "envelope stuffer" containing a pertinent safety message and related narrative.

2. The program also includes a recognition mechanism used during at the end of the fiscal year for the efforts of individuals who have worked injury free for the entire year. The Operations Manager selects the level of recognition to be provided.

D. Employees have available a "suggestion box system" which not only alerts facility management to existing concerns (allowing anonymity if desired by

the employee) but also provides suggestions for improvements to the Health & Safety Program.

E. The disciplinary procedure followed is one which applies to both job performance and health and safety violations. Appendix I summarizes the progressive discipline system in use throughout Rust Remedial Services.

1. All records of disciplinary action with respect to health and safety violations incorporate the following information:

   Date:
   Employee Name:
   Infraction:
   Disciplinary Action:
   Disciplinary Notification Provided By:

2. Copies of all disciplinary actions taken are forwarded to the Manager, Human Resources in the Fremont Office.

VII. RECORDKEEPING

A. Documentation and recordkeeping of the forgoing inspections, reports, audits, training, etc. is the responsibility of the Project Manager.

1. All documentation and records specified in this program and the Project Health & Safety Plan are to be readily available at the project site.

2. Copies of documentation and records which are generated by Health & Safety (such as training certificates) are to be retained by the Regional Manager, Health & Safety in Fremont, CA.

B. All health and safety documentation and recordkeeping specified in this program are to be retained indefinitely.

APPENDIX A

HEALTH & SAFETY

QUARTERLY AUDIT PROGRAM

HEALTH AND SAFETY AUDIT PROGRAM

Purpose of Audits:

- To evaluate Project performance on a quarterly basis
- To determine H&S needs
- To define policy guidelines
- To assure compliance
- To establish H&S operation standards

Format:

- conduct Audit
- summarize notes
- identify priority items
- provide closing discussion with site representative(s), preferably the Project Manager & Operations Supervisor(s)
- A summary report of observations and recommendations will follow within one week after completion of the audit. Items which require immediate action will be brought to the attention of the Project manager during the audit even though they may be restated in the written report to follow. A copy of the Audit Report will be distributed to both the Regional V.P. of Operations, and the Regional Operations Manager.

HEALTH AND SAFETY AUDIT GUIDELINES

1. GENERAL POLICIES AND PROCEDURES:

   Safety Policy
   Cal-OSHA Poster
   Employee Health & Safety Work Rules
   Accident Prevention Program
   Safety Committee Meetings
   Review of Project H&S Plan Compliance
   Requirements for Non-Rust Employees Visiting Project

2. REGULATORY AGENCIES, INDUSTRIAL SAFETY & HEALTH:

   Regulatory Requirements for Reporting and Recording
   Occupational Injuries and Illnesses - OSHA 200
   Procedure for Inspections by Fed-OSHA or Cal-OSHA

3. INSURANCE:

   Procedures for Handling Insurance Claims & Workers Compensation
   Procedure for Reporting Vehicle and General Liability Claims

4. TRAINING:

   Employee and Contractor Training Requirements
   Hazard Communication Program (Training, Labels, MSDS File)

5. MEDICAL SURVEILLANCE:

   Pre-employment Medical Examinations
   Periodic/Update Medical Examinations
   Return-to-Work Authorization for Industrial and Non-industrial Illness or Injury
   Exit Physical Examinations for Terminated Employees or Contractor Personnel
   Records
   Employee Injuries and Illness
   First Aid Kits
   Stretchers and First Aid Blankets
   Emergency Showers
   Physical Activity Restrictions

6. HAZARDOUS OPERATIONS:
Safe Vehicle Speed On Site:
Construction Equipment
Other Vehicles
Confined Space Entry Requirements
Smoking in Designated Areas
Machine Guarding: Belts, Pulleys, Gears, Shafts, etc.
Compressed Gases/Pressurized Systems
Steam Equipment
Horseplay/Running
Laboratory Safety
Cal-OSHA Work Permit For Excavation & Trenching
Contingency Plan
Site Health & Safety Plan for Hazardous Waste Operations
Employee Notification of Industrial Hygiene Monitoring
Results for Hazardous and Harmful Physical Agents
Handling, Removal and Disposal of Asbestos Containing Materials.

7. PERSONAL PROTECTIVE EQUIPMENT:
Goggles or Face Shields
Safety Shoes/Boots
Gloves
Protective Clothing
Hard Hats
Inventory and Supplies of PPE

8. FIRE SAFETY:
Exits and Stairs
Welding, Cutting, and Other Hot Work in Hazardous Locations
Standpipes, Hoses, Sprinkler Head and Valves
Fire Extinguishing Equipment and Training in Use
Storage of Flammable Material
Fire Drills & Site Alarms

9. ELECTRICAL SAFETY:
Bonding and Grounding
Frayed Wires, Loose Connections, Damaged Insulation
Ground Fault Circuit Interrupters
Use and Maintenance of Portable Electrical Equipment

10. HEARING CONSERVATION PROGRAM:
Annual Training
Availability of Hearing Protection Devices
Restrictions/Monitoring

11. RESPIRATORY PROTECTION PROGRAM:
Annual Fit-Testing
Availability of Respirators, Cartridges
Maintenance/Cleaning/Storage
Restrictions/Monitoring

12. GENERAL MOBILE EQUIPMENT:
Forklift Operator Qualifications & Training
Operation of RRS Owned, Leased, or Rented Vehicles
Operation of Personal Vehicles on Company Business

13. CONTRACTORS AND CLIENTS:
Contractor Pre-Qualification

14. FEDERAL MOTOR CARRIERS SAFETY REGULATIONS:
Qualification of Drivers Covered by the Federal Motor Carrier Safety Regulations
Hours of Service
Transportation of Hazardous Materials: Driving & Parking Rules
Vehicle Inspection Program
Parts and Accessories Necessary for Safe Operation
Vehicle Maintenance Program
DOT Accident Notification, Reporting, and Recordkeeping

15. HOUSEKEEPING:
Storage & Piling of Material
Washroom & Locker Room
Disposal of Waste (Trash)
Yards & Parking Lots
Stairs, Floors, Aisles

16. TOOLS:
Power Tools
Hand Tools
Use & Storage of Tools

17. MATERIAL HANDLING EQUIPMENT:
Hand Trucks, Power Trucks
Cranes & Hoists
Cables, Ropes, Chains, Slings
Improper Lifting Techniques

1.0 PURPOSE

To define minimum company requirements and responsibilities for performing health and safety inspections and program evaluations to recognize program strengths, workplace hazards, program deficiencies and unsafe work practices.

2.0 SCOPE

This procedure shall apply to all operations.

3.0 REQUIREMENTS AND RESPONSIBILITIES

3.1 Inspections

Each division shall develop and implement an inspection program which requires at least the following:

3.1.1 Each Health and Safety Manager or his/her representative shall inspect the operations under their control/responsibility at least monthly. For those individuals responsible for multiple sites, a schedule should be established so that a different site is inspected each month.

3.1.2 Each supervisor shall formally inspect the area(s) under his/her control at least monthly in addition to daily site walk-through inspections.

3.1.3 The results of all inspections including the issue and the proposed resolution shall be in writing. The inspection report shall be forwarded to the Division Manager or Facility Manager for action.

3.2 Program Evaluations

3.2.1 Each Region shall conduct evaluations of each division. For divisions with multiple facilities or sites, a representative number of these facilities or sites will be included in the division's evaluation. At least one formal written evaluation must be conducted yearly by Region Health and Safety staff personnel.

3.2.2 Corporate Safety and Industrial Hygiene shall conduct evaluations as required to support region needs, measure quality of past inspections and evaluations, or participate in special evaluations to assess acquisitions or customer-sensitive job sites.

3.2.3 The scope and content of the evaluation will include a review of compliance with the procedures in the Safety and Environmental Reference Manual, applicable OSHA regulations, loss control programs, and site-specific procedures as well as other standards which may apply such as NFPA, NRC, DOT, ANSI, etc.

3.2.4 The written evaluation report shall include the following:

- Division name, location and date(s) of evaluation
- A detailed list or description of procedures, programs and site facilities reviewed during the evaluation
- A brief paragraph summarizing the results of the evaluation
- An organized listing of the recommendations
- A narrative discussion or listing of the findings, program strengths and weaknesses, and basis for the recommendations

All observations and recommendations shall be communicated to the division or Facility Manager in a close-out meeting prior to leaving the site.

3.2.5 A draft copy of the evaluation shall be submitted to the General Manager for review and comment prior to release of the final report. The final report shall be distributed within 30 days of the inspection to at least the following people:

- The Division General Manager
- The Region Vice President
- The Division Health and Safety Manager or Representative
- The Corporate Director of Safety and Industrial Hygiene

3.2.6 The Division General Manager is responsible for ensuring that all items noted on the inspection or evaluation are addressed and followed to completion. The Regional Health and Safety Manager will track all recommendations on the evaluation until completion, and report progress in scheduled monthly operations review meetings (MOR).

3.3 Inspections, Evaluations and Audits of Non-Company Facilities

3.3.1 Health and safety inspections, evaluations, audits or other related services shall not be performed for non-Company companies or facilities without the approval of the Director of Safety and Industrial Hygiene. It is recommended that customers be referred to REC for health and safety services.

RUST REMEDIAL SERVICES WEST

Health and Safety Department

Project Name/Location	Project Manager	Name of Auditor(s)
Project Number	Site Safety Officer	Date

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
A.	**HEALTH AND SAFETY PLAN REVIEW**		
1)	Is there are a copy of the health and safety plan on site?		
2)	Is the health and safety plan approved by the H&S department? Name:		
3)	a. Have there been any changes to the job scope that affect the health and safety plan?		
	b. If so, were the changes approved?		
	c. Is there documentation/approval?		
4)	a. Does the project have a Site Safety Officer?		
	b. Does each shift have a Site Safety Officer?		
5)	When did the SSO complete SSO training? Date _____ How many projects has the SSO been assigned within the past year? Number _____		
6)	Are Federal/State OSHA signs posted? Are workers comp signs posted?		
7)	Are worker's compensation notification signs posted?		
8)	Is a copy of Division Health and Safety programs on site?		
9)	Is there a plan to control visitors and access to the site?		
10)	Is there a log kept of all who enter the site?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
	PROGRAMS		
1)	a. If there is a respiratory protection program required for this project, is a copy on site?		
	b. Are respirators specified for work tasks?		
	c. Are cleaning, maintenance and storage requirements specified?		
	d. Are employees aware of the regulatory protection procedures requirements?		
2)	a. Are PPE requirements specified?		
	b. Do requirements match the hazard?		
	c. Is the specified PPE being utilized?		
	d. Do employees wear company provided uniforms?		
	e. How are they laundered?		
	f. If locally, has the laundry service been informed?		
3)	a. Are decontamination procedures specified?		
	b. Does the decon station match the one specified in the HASP plan?		
	c. Are employees aware of the decontamination procedure?		
	d. Do employees follow specified procedure?		
4)	a. Are hazcom requirements specified?		
	b. Are employees trained in specifics of on-site hazardous materials?		
	c. Are MSDSs on site?		
	d. Are proper labels used?		
	e. Are employees knowledgeable of the site hazard communication requirements?		
5)	a. Are hearing protection devices required?		
	b. Is a hearing conservation program available?		
	c. Has a survey or evaluation of noise hazard been performed?		
	d. What method was used?: SLM Dosimeter Other:		
	e. Are employees offered hearing protectors for job tasks that expose employees to >85dBA for 8 hrs?		
	f. Are employees required to use hearing protectors for job tasks that expose employees to >90dBA for 8 hrs?		
	g. Is a copy of the noise standard posted?		
	h. Are areas posted that may expose employees to >90dBA?		
6)	a. Is a heat stress program specified in the health and safety program?		
	b. Are employees aware of the requirements?		
7)	a. Are all employees medically qualified to perform the work they are assigned?		

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
	PROGRAMS (Continued)		
7)	b. Are the medical examinations within one year of one another?		
8)	a. Is there a contingency plan readily available?		
	b. Is there a list of readily available emergency equipment?		
	c. Is the emergency equipment on site?		
	d. Are first aid/CPR trained employees on site for all shifts?		
	e. Is an emergency alarm or alert system specified in the plan?		
	f. Do employees understand the alarm system?		
	g. Do employees know the route to the medical provider?		
	h. Have local medical providers and agencies been notified of the work being conducted?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
	TRAINING AND INFORMATION		
1)	a. Are all workers on site, 40 hour trained? (Look @ Blue Book)		
	b. Are any workers on site with less than 40 hours of training?		
2)	Are all workers given an initial project training (at a minimum, a health and safety plan review)?		
3)	Are workers trained in site specific contaminants and hazardous materials?		
4)	a. Is there special emphasis training required? (Confined, space, welding, industrial trucks, heavy equipment, cranes)		
	b. Have affected workers received special emphasis training?		
5)	a. Is there a daily safety briefing?		
	b. Who performs them?		
	c. What is adequacy of documentation?		
	d. Does Project Manager attend safety briefings?		
6)	a. Are there Standard Division Practices (SDPs) that apply to the project? List Below.		
	b. Are these SDPs on site?		
	c. Are workers trained?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
INSPECTIONS		
1) Are routine health and safety inspections performed on site?		
2) Who performs them?		
3) How often?		
4) How are concerns followed up?		
5) Does Project Manager perform inspections?		
6) Have there been any OSHA inspections? If so, explain status below.		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
INCIDENT INVESTIGATION		
1) Are incident report forms available on site?		
2) Have any incidents occurred?		
3) Have incident reports been completed?		
4) Has Project Manager investigated incidents?		
5) Has follow-up action been taken?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
INDUSTRIAL HYGIENE MONITORING		
1) Is monitoring specified by the Health and Safety Plan?		
2) Are field logs, calibration, results, and employees notification letters kept together and readily available?		
3) Does actual monitoring match the plan requirements?		
4) Is the monitoring conducted by a qualified technician? List Name(s):		
5) Can he explain the use of equipment?		
6) Are follow-up actions taken when monitoring results warrant it?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
	SPECIAL HAZARDS		
1)	a. Is confined space entry required?		
	b. Is crew trained?		
	c. Are permits used?		
	d. Who completes the confined space entry permit?		
	e. Are the permits adequately completed?		
	f. Is testing equipment appropriate for the entry being made?		
	g. Is all monitoring equipment calibrated?		
	h. Can tester demonstrate use oaf equipment?		
	i. Is proper emergency equipment readily available?		
2)	a. Is hot work performed?		
	b. Is it in hazardous areas? (possibilities for fire, explosion, reactions)		
	c. Is a permit used?		
	d. Who completes the Hot Work Permit?		
	e. Are the permits adequately completed?		
	f. Is work done on contaminated materials?		
	g. Are special precautions taken?		
3)	a. Is there a need for a procedure to control hazardous energy?		
	b. What tasks necessitate the procedure?		
	c. Are authorized workers trained?		
	d. Are affected workers trained?		
	e. Are locks and tags utilized?		
	f. Is a copy of the "Lock Out - Tag Out" procedure available on site?		
4)	a. Are flammable liquids being transferred on site?		
	b. Is a bounding/grounding procedure in place?		
	c. Is it being utilized?		
	d. Are employees aware of the program?		
	e. Is equipment used for bonding and grounding appropriate and in good condition?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
4. **PROCESS SAFETY MANAGEMENT**		
1) Has a pre-start-up review been performed for all new or complex equipment that pose a significant health and safety risk? Review for adequacy.		
2) Who participated in the review? List Names:		
3) Have modifications been made as specified by the review?		
4) Is a copy of the review available on site?		
5) Have employees been trained in the use of equipment based on the review?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
HEAVY EQUIPMENT USAGE		
1) Are Roll-Over Protection and seatbelts provided for the earthmoving equipment?		
2) Are seatbelts used?		
3) Does equipment have fenders?		
4) Does equipment have two working headlights and two taillights?		
5) Does equipment have backup alarms?		
6) Are flaggers or spotters provided high profile warning vests?		
7) Is there a daily written check of equipment?		
8) Are equipment operators required to wear hearing protection?		
9) Are equipment operators wearing non-approved headsets (music/radio)?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
1.	**CRANES**		
1)	Is a chart providing the load rating secured to the crane in a location visible to the operation?		
2)	Does the crane have a boom angle or radius indicator visible to the operator?		
3)	does the cab have overhead protection?		
4)	When in travel, is the empty hook or block lashed or restrained?		
5)	Are tag lines used when rotation of load is hazardous?		
6)	Is a 10-B:C fire extinguisher kept at the operator's station?		
7)	Has ground crew been trained on the attaching of the load requirements?		
8)	Is a uniform signal system used?		
9)	Are employees trained or known to be qualified in the safe operation of the crane?		
10)	Has there been a proof load test of the crane within 4 years?		
11)	Is there a daily inspection conducted?		
12)	Are slings and fastenings inspected daily by a qualified person? Verify Qualifications?		
13)	Are steel chain, metal mesh, or synthetic web slings marked to show the rated capabilities?		
14)	Are precautions taken to prevent the boom or lifting device from coming within 10 feet of energized overhead high voltage lines?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

		YES	NO
K.	**EXCAVATION**		
1)	Do workers enter excavations or trenches?		
2)	Has a competent person been assigned to the project and on site?		
3)	Is an inspection of excavation and adjacent area performed prior to work daily and after rainstorms or other hazard increasing occurrence?		
4)	Is excavation that workers enter less than 5 feet in depth? If no, go to ... (5)		
	a. Does the protection meet the criteria for sloping or shoring?		
	b. If no, have the conditions been reviewed by a competent person?		
5)	Has the soil been classified by a competent person?		
6)	Is the protection system adequate for the soil type?		
7)	If the excavation is greater than 20 feet in depth or using an alternate system, have the written plans been reviewed and approved by a Professional Engineer?		
8)	Has the location of underground utilities been determined and are they protected?		
9)	If the excavation is greater than 4 feet and contains contaminants, is atmospheric testing conducted prior to entry?		
10)	Is emergency rescue equipment available?		
11)	Are barricades or warning systems available along the edge of an excavation if equipment must approach?		
12)	Is egress from trenches provided at least every 25 feet?		
13)	Are employees instructed to avoid being located?		
14)	Is the spils pile at least 2 feet from edge of excavation?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
L. WALKAROUND		
1) Are there scaffolds or racks or heights >7.5 feet which require employee occupance/work?		
a. Is a standard railing provided? 42-45" high and a mid-rail.		
b. Are toe boards provided?		
c. Are ladders or stairs firmly attached to scaffold?		
d. Anchorage and bracing prevents swaying, tipping or collapsing?		
e. Alternative fall protection provided?		
2) Are there any sources of electrical power greater than 110 V. on site?		
a. Are ground fault circuit interrupters used for outdoor flexible wiring where wet conditions may occur?		
b. Are circuit breakers labeled identifying the circuits they service?		
c. Is there at least 3 feet of unobstructed access space in front of circuit breakers?		
d. Are all electrical handtools double insulated or have third grounding prong?		
e. Are cords for powertools in good condition?		
f. Are any special electrical classifications for flammable atmospheres necessary for electrical equipment?		
g. Is there any exposed wiring?		
3) Housekeeping		
a. Describe housekeeping at decon station.		
b. Is there any storage of flammables or combustibles on site?		
c. Are exits blocked?		
d. Are there visible signs of trash, PPE or material not properly disposed?		
4) Emergency Equipment		
a. Is there any eyewash/shower station?		
b. If it is a pressure unit, it is fully charged?		
c. Is it readily accessible and not blocked?		
d. Is there a first aid station?		
e. Is it adequate and easily visible to employees?		
f. Have the fire extinguishes been inspected within the month?		
g. Are evacuation directions marked or posted?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
WALKAROUND (Continued)		
5) a. Work Practices and Conditions		
b. Are hand tools in satisfactory condition?		
c. Are tools being used for their intended purposes?		
d. Are guards attached to all equipment requiring them?		
e. Are individual workers required to manually carry or lift items?50#?		
f. Is eating, drinking, smoking, etc. only conducted in authorized areas?		
g. Are vehicles being driven at unsafe speeds?		
h. Are ladders in good condition?		
i. Are ladders tied off or secured when used?		
j. Is full protection provided for working at heights?		
6) **Hygiene**		
a. Is potable water available for washing and drinking?		
b. Are toilet facilities available on site?		
c. Is a decon trailer or room used on site?		
d. Is the room or trailer cleaned daily?		
e. Are employees required to take work clothes home for project?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
I. SUB-CONTRACTORS		
1) Are there sub-contractors on site?		
2) Do they have their own health and safety plan?		
3) Have they reviewed the project health and safety plan?		
4) Are copies of subcontractor medical and training on site?		
5) Does the sub perform specialty work? Heavy equipment, cranes, etc.?		
6) Do they have records of specialty work training?		
7) What is the reporting structure to resolve safety issues with subcontractor?		
8) Has the sub-contractor had any incidents?		
9) Are sub-contractor incidents followed up and a report to the PM?		
10) Have all sub-contractor incidents been reported to H & S by the PM?		
11) Does the sub perform separate morning tailgates? Are they reviewed for adequacy?		

COMMENTS

PROJECT HEALTH AND SAFETY AUDIT

	YES	NO
I. PERMITS/REGISTRATION		
1) Are any pressure vessels on site?		
2) Are inspections required?		
3) Are there required permits prior to use?		
4) Are there excavations or trenches 5 feet or deeper into which a person is required to descend?		
5) Are there permits requirements for excavations and trenches?		
6) Are there any demolition operations requiring a permit?		
7) Are there any construction operations requiring a permit?		
8) Are there any asbestos removal operations requiring a permit?		
9) Are there any carcinogens in use or to which employees may be exposed which requires registration?		
10) Is there any missing, tunneling or use of blasting equipment which requires registration or permits?		

COMMENTS

RECORDS TO BE AUDITED
PLEASE PROVIDE THOSE REQUIRED AT THE PROJECT SITE

1. HEALTH AND SAFETY PLAN
2. CONTRACT/BID
3. INJURY AND ILLNESS PREVENTION PLAN (CALIFORNIA AND OREGON)
4. DIVISION HEALTH AND SAFETY MANUAL AND/OR PROGRAMS
5. MEDICAL RECORDS: PHYSICIAN WRITTEN OPINION (INCLUDING CONTRACTORS)
6. TRAINING RECORDS (INCLUDING CONTRACTORS) WITH EMPLOYEE JOB DESCRIPTION
7. RESPIRATOR TRAINING AND FIT TESTING CERTIFICATION
8. STANDARD DIVISION PRACTICES
9. INCIDENT REPORTS (SUPERVISOR AND EMPLOYEE)
10. INCIDENT REPORTS (CONTRACTOR(s))
11. VEHICLE AND EQUIPMENT INSPECTION REPORTS
12. SAFETY INSPECTION REPORTS
13. JOB SAFETY BRIEFINGS
14. MSDSs FOR MATERIALS ON SITE
15. INDUSTRIAL HYGIENE RECORDS: (a. FIELD RECORDS, b. CHAIN OF CUSTODY, c. RESULTS, AND d. NOTIFICATIONS)
16. IH EQUIPMENT MANUALS AND EQUIPMENT CALIBRATION RECORDS.
17. COMPLETED PERMITS (HOT WORK, CONFINED SPACES, ETC.)
18. OSHA 200 LOG SPECIFIC TO THE PROJECT
19. SITE SPECIFIC TRAINING REQUIRED BY PROJECT (EMPLOYEE AND CONTRACTOR)
20. ON THE JOB TRAINING COMPLETED BY SUPERVISOR (24 HOURS)

APPENDIX B

WEEKLY HEALTH & SAFETY

INSPECTION FORM

RUST REMEDIALSERVICES INC. - WESTERN REGION

WEEKLY SAFETY INSPECTION REPORT

PROJECT: _____

DATE OF INSPECTION: _____

PROJECT LOCATION: _____ PROJECT NUMBER: _____

DATE PROJECT BEGAN: _____ NUMBER OF DAYS WORKED SINCE THE LAST LOST WORKDAY INJURY: _____

INSPECTOR: _____

PARTICIPANT(S): _____

SITE HEALTH & SAFETY OFFICER:

_____ _____
Signature Date

PROJECT MANAGER:

_____ _____
Signature Date

NOTE: Return this inspection report to the operations manager within seven (7) days If the inspection indicates major safety concerns or violations of safe operatin procedures, corrective action must be taken at once. If assistance is neede contact the Regional Health & Safety Manager @ (510) 249-4610.

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
HEALTH & SAFETY PLAN & REQUIRED DOCUMENTS			
A completed H&S Plan is onsite.			
A completed Contingency Plan is onsite.			
All employees, contractors, and visitors have reviewed the H&S Plan and Contingency Plan and there are sign-up sheets onsite to document this.			
An up-to-date OSHA 200 Log is onsite.			
Supervisor and employee reports are onsite for all accidents, injuries, and other incidents.			
The following documents are posted and conspicuously visible at the site:			
▸ OSHA Job Safety & Health Poster			
▸ RUST Substance Abuse Policy			
▸ RUST Sexual Harassment Policy			
▸ RUST Environmental Policy			
▸ RUST Health & Safety Policy			
▸ RUST Equal Employment Opportunity Notice			
▸ Location and directions to nearest hospital			
▸ Emergency phone numbers			
▸ Procedures for access to MSDSs			
▸ Procedure for access to employee medical exposure, and training records			
MSDSs are present onsite for all chemicals used onsite including treatment chemicals, absorbent and materials being handled as waste.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
PERSONAL PROTECTIVE EQUIPMENT			
Employees are wearing correct PPE and respirators as defined in the H&S Plan.			
Areas where hearing protection is required are clearly posted.			
Decon trailers and locker rooms are neat and clean with street clothing separated from work clothing.			
Used PPE is stored in covered drums and properly labeled for disposal.			
Decon water is changed at least twice daily.			
Respirators are washed daily, bagged and stored in a clean, dry area.			
All safety shoes are in good condition with no tears, cracks, or worn out soles or heels.			
All safety glasses are in good condition with no damaged lenses.			
VEHICLE CONTROLS			
All forklifts and heavy equipment vehicles have backup alarms and fully charged fire extinguishers.			
The site speed limit is posted and does not exceed 15 mph.			
Vehicle Inspection Reports (VIRs) are completed daily for every company vehicle and piece of heavy equipment used onsite.			
AIR SAMPLING PROCEDURES			
All air monitoring equipment is calibrated daily before use.			
Calibration records are kept in a bound notebook with all pages numbered and no missing pages.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
Calibration records show the date, type of instrument, serial number, calibration gas used, and the instrument reading compared to the calibration gas concentration.			
GENERAL SITE CONTROLS			
All chains, slings, and hoists are inspected daily before use.			
Completed Burning and Welding permits are onsite for all welding and cutting operations.			
Confined Space Entry Permits are onsite for all confined space work.			
Gasoline cans, spray paints, and other flammable liquid products are stored in a flammable storage cabinet or in a separate, clean, dry, storage area protected from weather and possible ignition sources.			
Floor openings and sumps are barricaded or fenced off to prevent falls.			
There are no tripping hazards present in the immediate work areas.			
Overhead hazards such as low ceilings and sharp corners are clearly marked with flagging tape or paint.			
Housekeeping is good in all work areas, including the decon zone.			
Oily rags are placed in covered metal containers and are disposed of daily.			
Benches and hand rails are provided in decon areas for employees washing and removing their boots.			
Emergency exits are clearly marked and are not blocked by vehicles, tools, or equipment.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
TARPING & SCAFFOLDING			
Tarping racks and scaffolds are in good condition with no breaks, cracks, or missing parts.			
Floor boards fit tight against each other with no open spaces in between.			
Floor boards are tied or bolted in place at both ends.			
Floor Boards stick out 6-18 inches beyond the ends of the tarping rack or scaffold.			
Tarping racks or scaffolds higher than 4 feet have rigid guardrails at least 42 inches high with mid-rails halfway between the platform and the top rail.			
Ladders are provided for climbing on and off platforms.			
Ladders are tied or bolted onto platforms.			
Employees working on scaffolds higher than 10 feet are wearing lifelines and safety harnesses for fall protection.			
Tarping racks and scaffolds are on level, stable ground with dry footings.			
Ladders and platforms are clean and free of ice,snow, and mud build-up.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
STAIRS, STEPS & LADDERS			
All stairs with more than 4 steps have handrails.			
The lowest step on each stairway is no more than 12 inches high.			
All stair steps are evenly spaced.			
Landing platforms higher than 4 feet have rigid guardrails at least 42 inches high with mid-rails half-way between the platform and the top rail			
Fixed ladders have landing platforms every 20 feet.			
Fixed ladders higher than 20 feet have ladder cages for fall protection.			
Only wooden ladders are used near electrical lines.			
Wooden ladders are not painted.			
Safety feet on ladders are in good condition.			
Distance between rungs on all ladders is 12 inches or less.			
Runs on ladders are evenly spaced.			
Ladders are in good condition with no breaks, cracks, chips, or missing parts.			
Ladders are marked with their maximum load ratings.			
Straight ladders extend three feet above the top landing.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
ELECTRICAL SAFETY			
All circuit breakers are labelled with the names of the circuits they control.			
All extension cords are protected from vehicle and foot traffic by rubber or wooden covers.			
Electrical outlets, junction boxes and circuit breaker panels are properly covered with no exposed wiring.			
All 120 volt single phase, 15 and 20 ampere receptacle outlets, which are not part of the permanent wiring of a building or structure will be protected by ground fault circuit interrupter or breaker.			
Have electrical outlets been checked for proper wiring.			
Extension cords are in good condition, with no splices or taping.			
Three-prong plugs are in good condition with no missing prongs.			
Adequate lighting is provided for work outdoors after dark.			
Lockouts and tagouts are properly placed before work begins.			
Hand tools and portable power tools have 3-prong plugs or are double insulated.			
COMPRESSED GASES			
Breathing air and other compressed gas cylinders are kept upright and are tied or chained to rigid supports.			
Cylinder caps are security fixed in place when compressed gas cylinders are moved or stored.			
Gas cylinders are moved with cylinder trucks or dollies.			
Compressed gas cylinders are labelled with their contents.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
FIRE EXTINGUISHERS			
Fire extinguishers are in place, clearly marked, and not blocked by vehicles, tools, or equipment.			
Fire extinguishers are full and have inspection tags that are initialled and dated after each monthly inspection and each service or maintenance.			
Halon and dry chemical fire extinguishers are emptied and refilled annually and hydrostatically tested every 12 years.			
FIRST AID & SAFETY SHOWERS			
First aid kits are fully stocked and are conspicuously visible.			
Safety showers are in place, clearly marked, and not blocked by vehicles, tools, or equipment.			
Safety showers are full of water and in good working order.			
Eyewashes are in place, clearly marked, and are not blocked by vehicles, tools, or equipment.			
Eyewashes are full of clean drinking water, tightly capped, and in good working order.			
Water in eyewashes is changed at least twice weekly.			

RUST REMEDIAL SERVICES INC. - WEEKLY SAFETY INSPECTION

PROJECT NAME: _____ **DATE OF INSPECTION:** _____

Every item must be checked off as "YES" or "NO" or marked Not Applicable. Every item marked "NO" must have an explanation under "Corrective Actions" of what has been done to correct the problem.

INSPECTION ITEM	YES	NO	CORRECTIVE ACTION
EXCAVATIONS			
All excavations are shored or sloped to 34 degrees or flatter (1 ½ foot horizontal to 1 foot vertical).			
All shoring systems have been selected and approved by a Registered Professional Engineer.			
Excavations are inspected daily and after every rain or snowstorm for signs of collapse, water, or other unstable conditions.			
Excavations are kept dry during all work operations.			
If employees enter excavations greater than 4 feet in depth, access ladders are provided every 25 feet.			
SCBA'S			
SCBAs are full and in good working order.			
SCBAs are inspected before each use and at least once each month.			
SCBAs have inspection tags that are initialed and dated after each inspection.			
Five-minute escape bottles are full and in good working order.			
Five-minute escape bottles are inspected before each use and at lease once each month.			
Five-minute escape bottles have inspection tags that are initialled and dated after each inspection.			
SCBA's and five-minute escape bottles are hydro-tested every 5 years for steel and every three years for aluminum.			

APPENDIX C

HEALTH & SAFETY COMMITTEE MEETINGS

1.0 PURPOSE

To define the composition, duties and responsibilities of safety committees.

2.0 REQUIREMENTS

- A committee shall be maintained at each of the four (4) major management levels to provide opportunities for involvement in the program. (Corporate, Group and Division).
- These committees shall meet on a regularly scheduled basis as indicated below.
- Meeting activities shall be documented.

3.0 DUTIES AND RESPONSIBILITIES:

3.1 PRESIDENT'S SAFETY COMMITTEE:

- Shall promulgate Safety and Compliance policy.
- Shall define and promulgate Safety and Compliance objectives for the companies.
- Shall regularly review the status and direction of the Safety and Compliance program.
- Shall meet at least quarterly.

3.2 GROUP SAFETY COMMITTEE:

- Shall review Company Safety and Compliance policies and procedures and supplement them as required by the special needs of the Group.
- Shall regularly review the status and direction of Group Safety and Compliance activities for consistency with the Company's programs and support of the Company's objectives.
- Shall meet at least quarterly.

3.3 DIVISION SAFETY COMMITTEES:

- Shall review Company and Group Safety and Compliance policies and procedures and develop supplemental rules, guides, etc as required by their operations.
- Shall regularly review the status and direction of Division Safety and Compliance activities for consistency with Company and Group programs and objectives.

- Shall develop and implement programs to promote management and employee participation and involvement in Safety and Compliance activities.
- Shall review Division accident and incident experience and assure program priorities are addressing causal factors.
- Shall meet at least monthly.

4.0 COMPOSITION

- The Company's President and Group safety committees should be comprised of the senior member of the entity and his appointees.
- Division Safety Committees should be composed of the Division/General Manager and appointees. Employee participation on this committee is optional with the Division.

APPENDIX B

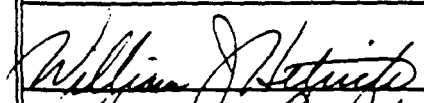
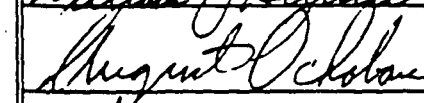
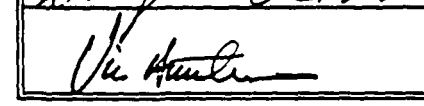
CONFINED SPACE ENTRY

STANDARD OPERATING PROCEDURE

HEALTH AND SAFETY STANDARD OPERATING PROCEDURE
Rust Remedial Services, Inc.
Western Region

Title: Confined Space Entry

Prepared By: Jim Bushnell **Effective Date:** February 21, 1994 **Page:** 1 of 22

Approved By: (Signature)	**Name/Title**	**Date**
	William J. Hetrick Regional Health and Safety Manager	6/9/94
	August Ochabauer Regional Operations Manager	6/1/94
	Vic Hutcheson Regional Vice President and General Manager	6/2/94

NOTE: This Health & Safety S.O.P. shall not be revised, replaced or modified without approval by the Regional Health and Safety Manager or designee.

1.0 PURPOSE:

This procedure is used to identify the minimum safety procedures for personnel entry into confined spaces.

2.0 SCOPE:

This procedure applies to confined space entry by employees and subcontractors of RUST Remedial Services, West. A confined space "SHALL NOT BE ENTERED" when the work can reasonably be accomplished from the outside, or if it contains an atmosphere that is Immediately Dangerous to Life or Health (IDLH). Entry occurs when any part of a person's body crosses the plane of the entryway.

A confined space means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work;
(2) Has limited or restricted means for entry or exit (i.e., tanks, vessels, silos, storage bins, hoppers, vaults, pits and excavations are spaces that may have limited means of entry); and
(3) Is not designed for continuous human occupancy.

A permitted-required confined space (permit space) means a confined space with one or more of the following characteristics:

(1) Contains or has the potential to contain a hazardous atmosphere;
(2) Contains a material that has the potential for engulfing an entrant;

(3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

(4) Contains any other recognized serious safety or health hazard.

A non-permit confined space means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

3.0 RESPONSIBILITY:

3.1 The Project Manager is responsible to ensure all confined space entry work is executed following this SOP and applicable RUST company and OSHA requirements. Operations Supervision are responsible for implementation of entry permit completion, rescue precautions and evaluation of hazards that may be encountered. Health & Safety shall provide technical support for risk evaluation, training, PPE review and selection as needed for safe execution of the work.

4.0 DOCUMENTATION/FORMS:

4.1 Confined Space Entry Permit (Exhibit 1)
4.2 Project Compliance Checklist (Exhibit 2)
4.3 Confined Space Entry Checklist (Exhibit 3)

5.0 ADDITIONAL PROTECTIVE EQUIPMENT:

Protective equipment is specified in the Health and Safety Plan and the Hazard Analysis for the specific job. No additional protective equipment is specified by this SOP.

6.0 SPECIALIZED EQUIPMENT, TOOLS, SUPPLIES:

6.1 Oxygen/% LEL/CO/H_2S Test Equipment - Gastech™ GX-82, GX-86, 3220, 4320 or equal
6.2 Organic Vapor Analyzer (FID, PID or equal) - to test for other air contaminants when the presence of significant concentration are suspected
6.3 Fire Extinguisher - 20 pound ABC is preferred
6.4 An effective communication system with two way radios, air horns, or some other means to summon help when needed
6.5 When entry rescue will not be possible, a retrieval system such as a retrieval line, chest or full-body harness, wristlets or an extraction device - tripod with winch. NOTE: Wristlets may be used in lieu of a chest or full-body harness if the employer can demonstrate that the use of a chest of full-body harness is not feasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative. The retrieval line must be attached to a mechanical device capable of retrieving a person from a vertical type permit space more than 4 feet deep.
6.6 Minimum of two (2) Self-Containing Breathing Apparatus (SCBA) for emergency response.
6.7 Detector tube apparatus such as Draeger™/Sensidyne™ or equal to detect specific gases suspected in the confined space.
6.8 Specific toxic gas analyzers such as those used for H_2S or HCN.

6.9 Material Safety Data Sheets (MSDS)

6.10 Intrinsically safe and explosion proof, Class 1, Division 1, lighting equipment to enable employees to see well enough to work safely. (Drop Light w/25' cable, Stock #XP162-25P from ORR Safety)

6.11 Ladder - as necessary to enter and exit safely.

6.12 Ventilating Equipment: The following or equivalent may be purchased or rented:
Electric: Stock #SVBE8-2GF, 2 speed, 750-1570 cfm from ORR Safety
Gas: Stock #SVBG8, # Horsepower, 3000 cfm from ORR Safety

6.13 Nitrogen, Argon, Carbon Dioxide or other inert gas.

NOTE: NO ENTRY SHALL BE ALLOWED INTO INERTED SPACES UNTIL PROPER VENTILATION IS INSTALLED AND THE SPACE HAS BEEN TESTED.

6.14 Caution Tape, barricade or barriers

6.15 Warning Signs.

6.16 Chains and Blocking Devices for securing mechanical hazards.

6.17 Flange Blinds for blocking lines

6.18 Lockout/Tagout Equipment for securing switches, valves, starters, etc.

6.19 Grounding and bonding equipment to prevent sparking where flammable or ignitable gases, vapors or liquids are handled.

7.0 PROCEDURES (TASKS, STEPS, ILLUSTRATIONS/DIAGRAMS):

7.1 HAZARD DETERMINATION:

The initial step in ensuring safe operations involving confined spaces is to determine the existence and type of confined spaces on the site. This determination shall be documented on the site specific "Confined Space Entry Plan" form (Exhibit 4) and shall designate permit required versus non-permit required confined spaces. Permit required and non-permit required confined space determination requirements, examples and considerations are as follows:

7.1.1 Non-Permit Confined Space. The following consider actions must be addressed when determining a non-permit confined space.

- Chemical Hazards. The type and physical characteristics of the chemical previously contained. Evidence of crystallization, rust, discoloration and residue. Determine if the chemical is non-hazardous versus hazardous from a personal exposure perspective.

- Ventilation. Does the confined space have sufficient and adequate local ventilation where mechanical means for purging and inerting are not necessary.

- Physical surrounding. Presence and proximity locations of tall building and trees that may obstruct and/or prevent normal air flow should be noted. Drifting vapors from tanks, sewers and industrial/manufacturing facilities may have an influence.

- Work to be performed in the space such as welding, cutting, grinding, painting, etc. which could change the conditions in the space.

Some examples of spaces which MAY be non-permit spaces:

- Roll-Off Box (with all compartment doors open).
- Above-ground containment and holding areas.
- Surface Impoundment
- New Storage tanks (not overhead covering)

7.1.2 Permit Required Confined Space. A permit required confined space is one which has any one ore more of the following conditions/characteristics:

- Contains or has a potential to contain a hazardous atmosphere:

(a) Flammable gas, vapor, or mist in excess of 10 percent of its Lower Explosive Limit (LEL)
(b) Airborne combustible dust at a concentration that meets or exceeds its Lower Flammable Limit (LFL)
(c) Atmospheric oxygen concentration below 19.5% or above 23.5%. Before entry is allowed the reasons for oxygen deficiency or excess must be determined, and ventilation must be installed.
(d) Atmospheric concentration of any substance above a published permissible exposure limit or threshold limit value.
(e) Any other atmospheric condition that is Immediately Dangerous to Life or Health (IDLH)

- Contains a material that has the potential for engulfing an entrant.

- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

- Contains any other recognized serious safety or health hazard.

Examples of spaces which MAY be permit required confined spaces

Tanks	Vessels
Silos	Storage Bins
Hoppers	Vaults
Excavations (greater than 4 feet deep)	

7.2 QUALIFICATIONS

Employees must be trained in the following areas to perform confined space operations.

7.2.1 Health and Safety Hazards
7.2.2 Lockout/Tagout Procedures and Instructions
7.2.3 Inerting of Spaces and Hazards of Inert Gas
NOTE: Entry is not allowed into inerted spaces until adequate ventilation has been demonstrated and the oxygen level of the space tested
7.2.4 Testing of the Atmosphere and Inspection Procedures
7.2.5 Completion of Confined Space Entry Permit
7.2.6 Ventilation Techniques
7.2.7 Standby Person (Attendant) and Entry Supervisors Duties and Responsibilities
7.2.8 Emergency and Contingency Procedures including SCBA use.
7.2.9 Completion of the RRS Basic 40 Hour HAZWOPER Training, or equivalent
7.2.10 Authorized individuals who have current First Aid/CPR training shall be on-site during any entry
7.2.11 Industrial Hygiene Instrumentation Procedures and Instructions
7.2.12 Heat/Cold Stress Signs, Symptoms, and Control

7.3 PROCEDURAL DUTIES AND RESPONSIBILITIES

7.3.1 Authorized Entrants:

(a) Identify and know the hazards that may be faced during entry, to include the signs, symptoms and consequences of over exposure.

(b) Is properly trained to use the equipment as prescribed in the equipment operators manual or trained by an experienced supervisor.

(c) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required. If the attendant detects a prohibited condition, the behavioral effects of hazard exposure in an authorized entrant, a situation outside the space that could endanger the authorized entrants or if the attendant cannot effectively and safely perform all the duties required, the problems shall be communicated to the entrants and the space evacuated.

(d) Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation or the entrant detects a prohibited condition.

(e) Exit from the permit space as quickly as possible whenever an order to evacuate is given by the attendant or the entry supervisor, when the entrant recognizes any warning signs or symptoms of exposure to a dangerous situation, when the entrant detects a prohibited condition, or when an evacuation alarm is activated.

7.3.2 Stand-By (Attendant)

(a) Know the hazards that may be faced during entry, including information on the mode, signs, symptoms and consequences of exposure.

(b) Be aware of possible behavioral effects of hazard exposure on authorized entrants.

(c) Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants will enable the attendant to quickly and accurately determine which authorized entrants are inside the confined space.

(d) Remain outside the permit space during entry operations until relieved by another attendant. The attendant may only enter a space for rescue purposes if the attendant has been properly trained and equipped for rescue operations and if the attendant has been relieved by another attendant. Where entry rescue is contraindicated during the confined space assessment (see Section 7.1), a lifeline, harness and extraction device, as appropriate shall be provided so that rescue entry is not required.

(e) Communicate with authorized entrants as necessary to monitor entrant status and to alert entrant of the need to evacuate the space.

(f) Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:

- if the attendant detects a prohibited condition;
- if the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
- if the attendant detects a situation outside the space that could endanger the authorized entrants;
- of if the attendant cannot effectively and safely perform all the duties and responsibilities.

(g) Summons rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

(h) Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway.

1. Warns unauthorized person that the must stay away from the permit space.
2. Advises the unauthorized that they must exit immediately if they have entered the permit space.

3. Informs the unauthorized entrants and the entry supervisor if unauthorized persons have entered the permit space.

(i) Perform no duties that might interfere with the attendants primary duty to monitor and protect the authorized entrants.

7.3.3 Entry Supervisor

(a) Know the hazards that may be faced during entry, including information on the mode signs or symptoms, and consequences of over exposure. Complete a confined space Entry Compliance Check List (Exhibit 3).

(b) Verify, by checking that the appropriate entries have been made on the permit, that all tests, initial and periodic, specified by the permit or HASP have a been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

(c) Terminate the entry and cancels the permit when the entry operations covered by the entry permit have been completed or a conditions that is not allowed under the entry permit arises in or near the permit space.

(d) Verify that rescue services are available and that the means for summoning them are operable.

(e) Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.

(f) Determine, whenever responsibility for a permit space entry operation is transferred to another person, the approval interval dictated by the hazards and operations performed within the space, that entry operations remains consistent with terms of the entry permit and that acceptable entry conditions are maintained.

(g) Inform all employees of other confined spaces within the workplace by posting danger signs or by any other equally effective means (lock and chain, binding cable, etc.) to prevent unauthorized entry, informing employees of the existence, location and danger posed by the permit spaces. signs should read "DANGER - PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER" or equally obvious warning sign.

(h) Confirm that each procedure and instruction for isolating, removing and de-energizing of the confined space through the use of lockout/tagout locks and permits, blanking, blinding, misaligning or removing sections of pipes, lines or ducts, double block and bleed system, or blocking or disconnecting all mechanical linkage are in accordance with established SOP's for these tasks.

(i) Verify that mechanical means of purging, inerting, flushing or ventilating have been met to adequately comply with established atmospheric safe entry guidelines.

(j) Provide barriers or barricades to prevent unauthorized entry and protect entrants from external hazards.

7.3.4 Project Manager

(a) Ensure compliance with this procedure for all project site operations.

(b) Ensure adequate posting and communication about confined space hazards at the project site.

(c) Complete the project site compliance check list (Exhibit 2).

7.4 PRE-ENTRY REQUIREMENTS

7.4.1 Designate entry personnel, stand-by person (attendant), and entry supervisor.

7.4.2 Inform personnel of their duties and the potential hazards associated with the confined space entry. Review entry and emergency procedures with the entry team and attendant before entering the confined space.

7.4.3 Isolate the confined space to prevent the introduction of hazardous materials by locking valves, inserting blanks in lines, etc. See RRS Line Breaking SOP.

7.4.4 Lockout and tagout all energy sources to prevent accidental activation.

7.4.5 Check the atmosphere initially and after any needed isolation or ventilation has been installed. The atmosphere must be tested by a qualified person using a properly calibrated instrument. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmosphere envelope should be tested a distance of approximately 4 feet in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

7.4.5.1 Measure the oxygen content to ensure that the level is not less than 19.5% or more than 23.5%.

NOTE: If the confined space must be continuously ventilated to maintain the oxygen level then continuous oxygen monitoring is required.

7.4.5.2 Measure the flammable vapor levels. Concentrations must be less than 10% of the Lower Explosive Limit (LEL) for entry.

CAUTION! Do not measure % LEL if the oxygen content is less than 19.5%. Low oxygen levels will result in false low % LEL readings.

7.4.5.3 Measure hydrogen sulfide and carbon monoxide levels if applicable. If H_2S levels are above 10 ppm or CO levels are above 35 ppm, supplied air respirators are required.

7.4.6 Monitor the atmosphere using a FID or PID instrument as required by the HASP for toxic levels or organic contaminants.

7.4.7 Continuous ventilation of confined spaces will be necessary when there is the potential for changing atmospheric conditions (i.e., manholes, sewers, tank sludge removal, etc.)

7.4.8 All electrical equipment used in the confined space shall be protected by a Ground Fault Circuit Interrupter (GFCI). If there is a possibility of flammable vapors, ventilation equipment must be properly grounded and bonded and all electrical equipment must be rated intrinsically safe or explosion proof and labelled with an Underwriters Laboratory™ (UL) or Mine Safety and Health Administration (MSHA) approval.

7.4.9 Entry supervisor shall complete and verify the confined space entry checklist (Exhibit 1).

7.5 ENTRY SUPERVISOR REQUIREMENTS

7.5.1 Verify the names and numbers of entry personnel, name(s) of the attendant, and names and numbers of backup personnel and emergency service phone numbers.

7.5.2 Confirm the successful completion of all current required training and instructions.

7.5.3 Review all initial and continuous direct readings, tests and monitoring data to ensure compliance with the HASP.

7.5.4 Conduct an inventory of all applicable equipment - addition, emergency and specialized equipment.

7.5.5 Describe and document in detail, all rescue procedures and guidelines.

7.5.6 Verify that all required industrial hygiene monitoring equipment is available.

7.5.7 Complete, sign, and post the confined space entry permit at the entry portal or in close proximity or by any other equally effective means, so that the entrants and attendants can confirm that pre-entry and entry preparations have been completed.

7.6 REQUIREMENTS FOR THE CONFINED SPACE ENTRY PERMIT SYSTEM

7.6.1 The permit must identify the permit space to be entered, the purpose of the entry and the date.

7.6.2 The entry supervisor must complete the pre-entry and entry requirements/ checklist.

7.6.3 The entry supervisor must sign the permit to authorize entry. All authorized entrants must also sign the permit.

7.6.4 The completed permit shall be made available at the time of entry to all authorized entrants, by positing it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry and entry preparations have been completed.

7.6.5 The entry supervisor shall terminate entry and cancel the entry permit when: the entry operations covered by the entry permit have been completed; or a condition that is not allowed under the entry per arises in or near the permit space.

7.6.6 The authorized entrants within the permit space, shall be identified by name or by such other means to enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space.

7.6.7 Identify the attendant(s) by name.

7.6.8 The name of the current entry supervisor with a space for the signature and initials of the entry supervisor who originally authorized entry.

7.6.9 The hazards of the permit space to be entered.

7.6.10 The measures used to isolate the permit space and to eliminate or control permit space hazards before entry.

7.6.11 The results of initial and periodic tests performed during pre-entry requirements accompanied by the name or initials of the testers and date when the tests were performed.

7.6.12 The results of initial and periodic tests performed during pre-entry requirements accompanied by the name or initials of the testers and date when the tests were performed.

7.6.13 The rescue and emergency services that can be summoned and the means (such as the equipment) to use and the number to call for summoning those services.

7.6.14 The communication procedures used by authorized entrants and attendants to maintain contact during the entry.

7.6.15 Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with entry requirements.

7.6.16 Any additional permits, such as for hot work, line breaking, lockout/tagout that have been issued to authorize work in the permitted space.

7.6.17 Each canceled permit shall be retained for at least 1 year to facilitate the review of the confined space entry program. Any problems encountered during pre or entry operation must be noted on the confined space entry permit so that appropriate revisions to the confined space entry program can be made.

NOTE: All entry permits must be returned to the supervisor and maintained in the job file upon the completion of the specified work or expiration of the permit. At the end of any project, all permits shall be forwarded to the RRSW Health and Safety Department for review.

7.7 MINIMUM PRECAUTIONS FOR PERMIT REQUIRED CONFINED SPACES

Additional precautions made by the Health and Safety Department shall be noted in the Health and Safety Plan for each site and/or SOP or Hazard Analysis for each task.

7.7.1 Inspect the immediate area around the confined space to be sure no unprotected chemical or physical hazards exist.

7.7.2 Where vertical entry is required or as required by HASP, SOP or hazard analysis, attach a lifeline to the harnesses worn by each employee entering the confined space. A mechanical extraction device shall be available to retrieve personnel from a vertical permitted space more than 4 feet deep. When feasible, personnel must be attached to the tripod and winch to serve as a fall protection device during entry and to facilitate rescue exit from a vertical entry confined space.

7.7.3 Lower, never drop, tools requested by persons in the confined space. Whenever possible, all tools and equipment should be lowered into the confined space prior to personnel entry.

7.7.4 Use non-sparking tools whenever working in potentially flammable atmospheres.

7.7.5 Check the condition of ladders and other means of descent into the confined space and secure them at the top before relying on them to support the entrants weight.

7.7.6 Keep all gas cylinders or fuel containers out of the confined space. (Except escape bottles on air gear or SCBA bottles used by rescuers..)

7.7.7 Ensure that all tools, monitoring instruments, and lanterns are intrinsically safe when working in potentially flammable atmospheres.

7.7.8 Obtain a Hot Work Permit for any hot work to be performed.

7.7.8.1 Quick shut-offs which are under the control of the attendant must be provided on all welding or burning equipment used inside a confined space.

7.7.8.2 Shut off gas supply at the cylinders and remove the torch from the space when cutting has been suspended.

7.8 ATTENDANT RESPONSIBILITIES

The attendant must be stationed at the entrance in full view of entry personnel to observe and communicate with them at all times. The attendant shall never leave this position except for summoning emergency assistance, nor shall they enter the confined space for any reason unless relieved by another similarly qualified person.

7.8.1 Monitor atmospheric testing equipment.

7.8.2 Keep lifelines and air hoses free from obstructions.

7.8.3 Summon sufficient help in the event of an emergency.

7.8.4 Ensure that sufficient personal protective equipment and breathing air are maintained and adequately supplied.

7.8.5 Observe entrants for heat stress conditions and provide an adequate work/rest cycle and fluid intake.

7.9 APPLY THE GENERAL RULES WHEN PLANNING FOR AND RESPONDING TO EMERGENCIES:

7.9.1 Develop and test an effective system of communication (radio, horn, etc.) between the attendant and emergency response members.

7.9.2 Arrange a response time for emergency personnel that is as short as practical and ideally no longer than 5 minutes (on- or off-site response teams).

7.9.3 The entry supervisor shall ensure that each member of the rescue service are properly trained to use personnel protective equipment and rescue equipment necessary for making rescues from permit spaces.

7.9.4 Each member to the rescue service shall practice making permit space rescues at least once every 12 months, by means of a simulated rescue operation in

which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces.

7.9.5 Each member of the rescue service shall be trained in basic first aid/CPR. At least one member of the rescue service will have first aid/CPR certification.

7.9.6 Always attempt rescue from outside the confined space whenever feasible (i.e., use lifelines).

NOTE: *Unless a tripod and winch is used, at least three (3) people should be* available to lift a person out of vertical confined space via a lifeline. Two (2) people should be available when a tripod and winch are being used.

7.9.7 Consider the confined space openings, obstructions and other conditions which could impede rescue attempts when choosing protective equipment for rescue personnel and rescue methods.

7.9.8 Develop a method for directing outside response personnel to the entry site. methods may include a site map, meeting them at the property entrance, etc.

8.0 USER RESPONSIBILITIES

8.1 Ensure that each employee on the entry team is qualified and knowledgeable of the hazards associated with confined space entries.

8.2 Ensure all pre-entry procedures are completed and work is conducted safely, satisfactorily and understood by all members.

8.3 Complete both sides of a confined space entry permit in ink, and post it at or near the entry of the space.

8.4 Station attendants who have been informed of their responsibilities at the entrance in full view of the workers inside.

8.5 Develop and test an emergency response plan adaptable to the specific confined space.

9.0 USER PERFORMANCE CRITERIA

9.1 Confined spaces are characterized and a confined space entry permit is completed for all permit required confined spaces and all precautions are taken.

9.2 Following all prescribed procedures, the confined space entry operation has been satisfactorily completed safely and without injury.

9.3 Evaluate the workplace and determine if any spaces are permit required. If so, a system of identifying, location, and warning signs must be established.

9.4 Notify the RRS Health and Safety Department of the problems encountered with this Confined Space Entry Procedure.

10.0 CROSS REFERENCES

10.1 Title 29 Code of Federal Regulations, 1910.146, "Permit Required Confined Space Entry"
10.2 Job Specific Health and Safety Plan
10.3 RRS Lockout/Tagout Procedure
10.4 RRS Line Breaking Procedure
10.5 RRS Hot Work Procedure
10.6 RRS Grounding and Bonding Procedure

11.0 REGULATORY/PERMIT REQUIREMENTS

11.1 Title 29 Code of Federal Regulations, 1910.146, "Permit Required Confined Space Entry"

12.0 GLOSSARY OF TERMS

12.1 Attendant - A qualified authorized person assigned to act as the safety watch for personnel inside a confined space.

12.2 Confined Space - An enclosed area which has restricted opening(s) for entry or exit, unfavorable natural ventilation, may contain potential or known hazards, and is not intended for continuous human occupancy.

12.3 Entry Permit - Written or printed document that is provided by the employer to allow and control entry into a permit space.

12.4 IDLH - Immediately Dangerous to Life or Health. IDLH concentrations represent the maximum concentration from which one could escape within 30 minutes without a respirator and without experiencing any escape-impairing (e.g., severe eye irritation) or irreversible health effects.

12.5 LEL - Lower Explosive Limit. The lowest concentration (expressed as percent by volume in air) of vapor or gas in the air that burns or explodes if an ignition source is present at ambient temperature.

12.6 Contingency Plan - A written plan of action for possible emergency situations.

12.7 Qualified Person - A person by reason of training and experience who is familiar with the operation to be performed and the hazards involved.

12.8 Properly Calibrated Instrument - An instrument adjusted in a clean area that will properly evaluate the contamination levels of a potentially hazardous area.

12.9 Ground Fault Circuit Interrupter (GFCI) - A device designed to monitor the return of electricity from an electrical device and break the circuit if there is any loss of current caused by a short circuit in the device.

12.10 Intrinsically Safe - The amount of electrical energy used by the device is insufficient to cause ignition of a flammable atmosphere.

12.11 Explosion Proof - Electrical lights, connectors, etc. that contain an dissipate the energy of an ignition to prevent igniting a flammable atmosphere.

12.12 HASP - Health and Safety Plan.

12.13 MSDS - Material Safety Data Sheet

12.14 SOP - Health and Safety Department Standard Operating Procedure

12.15 CO - Carbon Monoxide

12.16 HCN - Hydrogen Cyanide

12.17 H_2S - Hydrogen Sulfide

RUST

CONFINED SPACE ENTRY PERMIT

Both Sides Must be Completed No._____

Permit is required for entering any tank or enclosed space for any purpose; and may be granted only in accordance with the provisions of the RUST Confined Space Entry Program.	
Good this day only _____/_____/_____	_____ m TO _____ m
Project Name:	
Project Location:	
Type of Confined Space:	Space Name or I.D Number
I Certify that all necessary precautions have been taken to make this space safe for entering and carrying on prescribed work during the specified time.	
Supervisor:	
Atmosphere Tester:	
Site Safety Officer:	
Standby Observer:	
I have been properly instructed for safe entry into this tank and understand my Duties:	
SIGNATURE AND SOCIAL SECURITY NUMBER OF PERSONS AUTHORIZED TO ENTER SPACE.	
	- -
	- -
	- -
	- -
	- -

BEFORE THIS PERMIT CAN BE SIGNED THE FOLLOWING RULES MUST BE SATISFACTORILY COMPLIED WITH:

	Initial Appropriate Item	
	Yes	Not Necessary
1. Tank cleaned washed and purged:		
2. Wash water tested for hazardous properties:		
3. All fuses or safety jacks pulled, breakers and switches locked out and tagged:		
4. All lines broken and/or blanked:		
5. Observers assigned and properly instructed:		
6. Employees in the immediate area are alerted to help if needed: (list names)		
7. Rescue equipment on the job, extra rope, harness, extraction device, SCBAs:		
8. Ventilation Provided:		
9. Electrical Equipment Bonded and Grounded:		
10. Intrinsically Safe or Explosion Proof Equipment Required		

Safety Equipment Required:

Atmospheric Testing:							
Initials	Time	Exact Location	Flammable Vapors (%LEL)	Percent Oxygen (%O_2)	Toxics CO	Toxics H_2S	Toxics Other

Additional Requirements:

RUST REMEDIAL SERVICES INC.

CONFINED SPACE ENTRY

ENTRY COMPLIANCE CHECKLIST

This is an optional checklist to aid in recognizing safe work practices and regulatory compliance for confined space entry. It is highly recommended for complicated work in confined spaces or if the project management team has not conducted confined space entry for over 6 months.

Project Name:	Project Number:
Space ID:	Space Location
Entry Supervisor:	
Attendant:	
Entrants:	
1.	2.
3.	4.
5.	6.

JOB SITE:	Yes	No	N/A
1. Has an overall assessment been conducted to determine additional hazards?			
a. Electrical - (overhead, buried, active/inactive)			
b. Physical - (buildings, trenches, ponds, etc..)			
c. Active Lines - (gas, water, discharge, corrosive)			
d. Mechanical - (mixers, adjacent operations)			
2. Have plans, practices and procedures been implemented to address safe entry?			
a. Hazards (chemical, electrical, natural)			
b. Acceptable Entry Conditions			
c. Purging, Inerting, Flushing, or Ventilating			
d. Verifying the conditions prior to entry			
e. Communication equipment			
f. Personal protective equipment			
g. Lighting equipment			
h. Rescue and emergency equipment			

RUST REMEDIAL SERVICES INC.

CONFINED SPACE ENTRY
ENTRY COMPLIANCE CHECKLIST

JOB SITE: (Continued)	Yes	No	N/A
2. Have plans, practices and procedures been implemented to address safe entry?			
i. Communication			
j. Traffic, Pedestrians, Regulatory Agency			
3. Have Plans, practices and procedures been implemented for summoning emergency services?			

TRAINING:	Yes	No	N/A
1. Are all personnel adequately trained and current? (40 hr, site specific)			
2. Are all personnel using direct reading instruments trained in their use?			
3. Are all personnel trained on the use of rescue and emergency equipment - lifeline, safety harness, wristlets, hoisting and communication devices?			
4. Are all personnel trained on the hazards of the job and methods to safely perform their work?			
5. Are all rescue and attendants currently trained in 1st Aid and CPR?			
6. Are all personnel briefed on the locations of all emergency equipment, emergency phone numbers, contingency/evacuation routes and procedures, signs and symptoms of exposure?			
7. Are all personnel trained on the location(s) and shut off procedure for all equipment used?			
8. Is all training above documented?			
9. Has site specific entry training been completed and documented prior to employee entry?			
10. Have entry procedures been observed for employee proficiency required for entry and deficiencies corrected?			

RUST REMEDIAL SERVICES INC.

CONFINED SPACE ENTRY

ENTRY COMPLIANCE CHECKLIST

PERMITS:	Yes	No	N/A
1. Has a confined space entry permit been posted at the entry or in close proximity to the space			
2. Does the confined space entry permit identify the permitted space to be entered, purpose, date and the authorized duration of the permit?			
3. Has atmospheric testing been conducted and documented for - Oxygen, %LEL, and applicable toxic gases?			
4. Are the atmospheric testing levels acceptable for entry per the HASP?			
5. Is the confined space entry supervisor been identified by name on the permit and has the supervisor signed the permit?			
6. Is the attendant identified by name on the permit and been trained?			
7. Is the permit valid for only the duration of the job, or for 8 hours, whichever is less?			
8. Are all hot work and line breaking permits posted and properly filled in?			

EQUIPMENT: (or as required in the HASP or hazard analysis)	Yes	No	N/A
1. Industrial Hygiene			
a. Combustible Gas Indicator with %LEL/O_2/CO/H_2S with calibration gas.			
b. FID or PID with calibration gas			
c. Noise dosimeter w/calibration meter (for high noise areas)			
2. Personal Protective Equipment			
a. Two Self-Contained Breathing Apparatus.			
b. Personal coverall per HASP or hazard analysis			
c. Overboots			
d. Nitrile or Neoprene outer gloves per HASP			
e. Nitrile inner gloves per HASP			
f. Egress Bottle			
g. Breathing Air Hose Lines			

RUST REMEDIAL SERVICES INC.

CONFINED SPACE ENTRY

ENTRY COMPLIANCE CHECKLIST

EQUIPMENT: (Continued)	Yes	No	N/A
3. Rescue and Emergency Equipment			
a. Full Body Harness			
b. Retrieval Device			
c. Wristlets			
d. Major First Aid Kit			
e. Two Way Radio			
4. Specialty Equipment/Items			
a. Non Sparking Tools			
b. Lockout/Tagout - blinds, permits, isolating devices, etc.			
c. Welding/Burning supplies			
d. Ladder			
e. Lighting			
f. Ventilation and Purging			
g. Inerting (nitrogen, carbon dioxide)			
h. Hot work permit.			

RUST REMEDIAL SERVICES INC.

CONFINED SPACE ENTRY PROGRAM

PROJECT SITE COMPLIANCE CHECKLIST

This checklist must be completed for all project sites

Project Name:	Project Number:	Date:
Project Manager:_____ (signature)	SSO/SHSO:_____ (signature)	

	Yes	No	N/A
1. Are there, or will there be any confined spaces on the site? (if yes, continue, if not, sign above)			
2. Are there any "permit required" confined spaces on the site? (if yes, continue, if not, complete section I and sign above)			

Section I. Non-Permit Required Confined Spaces

3. List the type and location of non permit required confined spaces on site.

Type	Location
a.	
b.	
c.	
d.	

4. Is there a current written confined space entry program within the Health and Safety plan or otherwise on the project site?			

Section II. Permit Required Confined Spaces

5. List the type and location of permit required confined spaces on site.

Type	Location
a.	
b.	
c.	
d.	

6. Are all confined spaces identified and are measures implemented to prevent unauthorized entry?			
7. Are all confined spaces adequately marked and labeled - "DANGER - PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER"?			

APPENDIX C

HEAVY EQUIPMENT DECONTAMINATION

STANDARD OPERATING PROCEDURE

DRAFT

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Chemical Waste Management, Inc.
Western Region ENRAC

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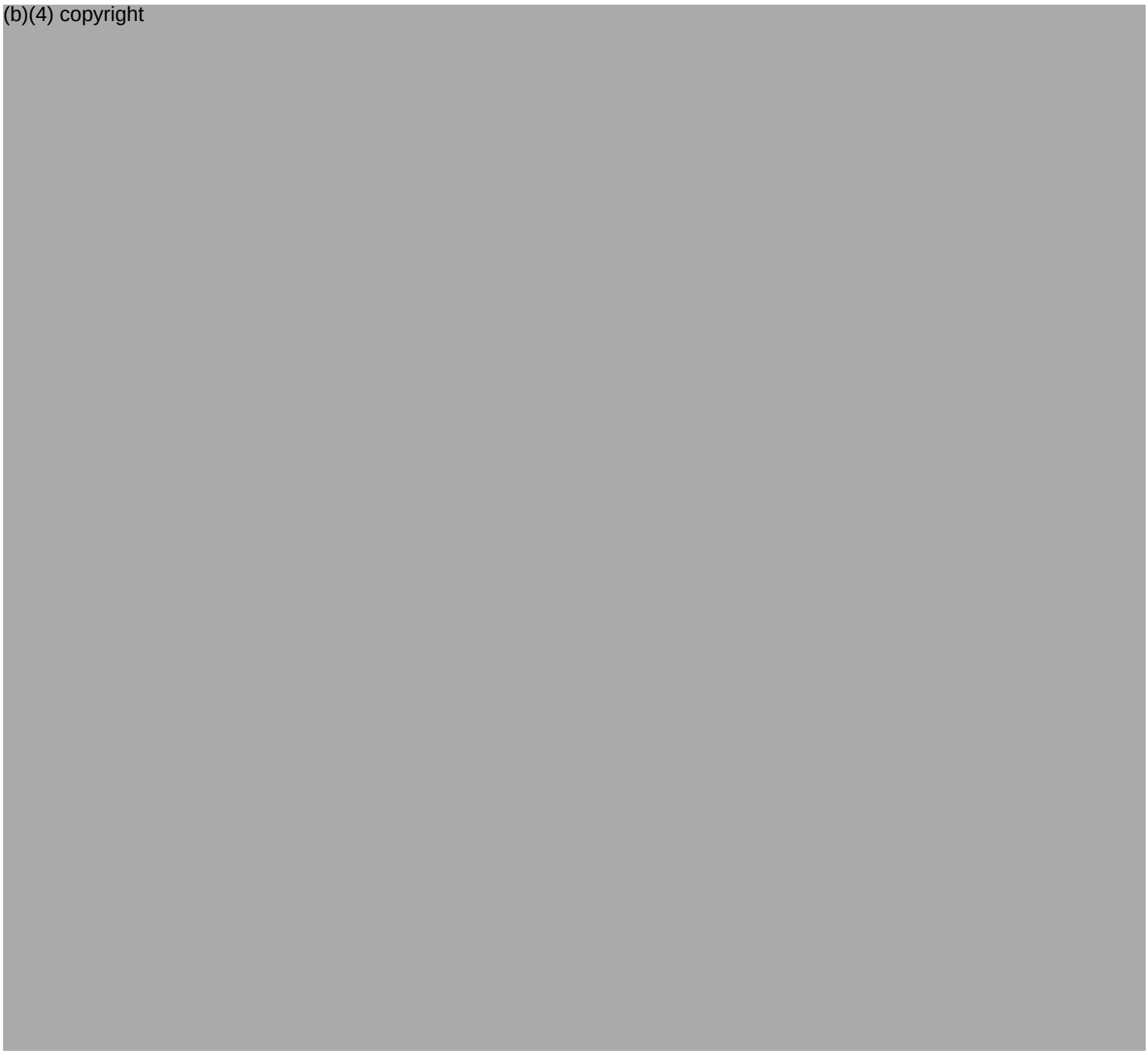

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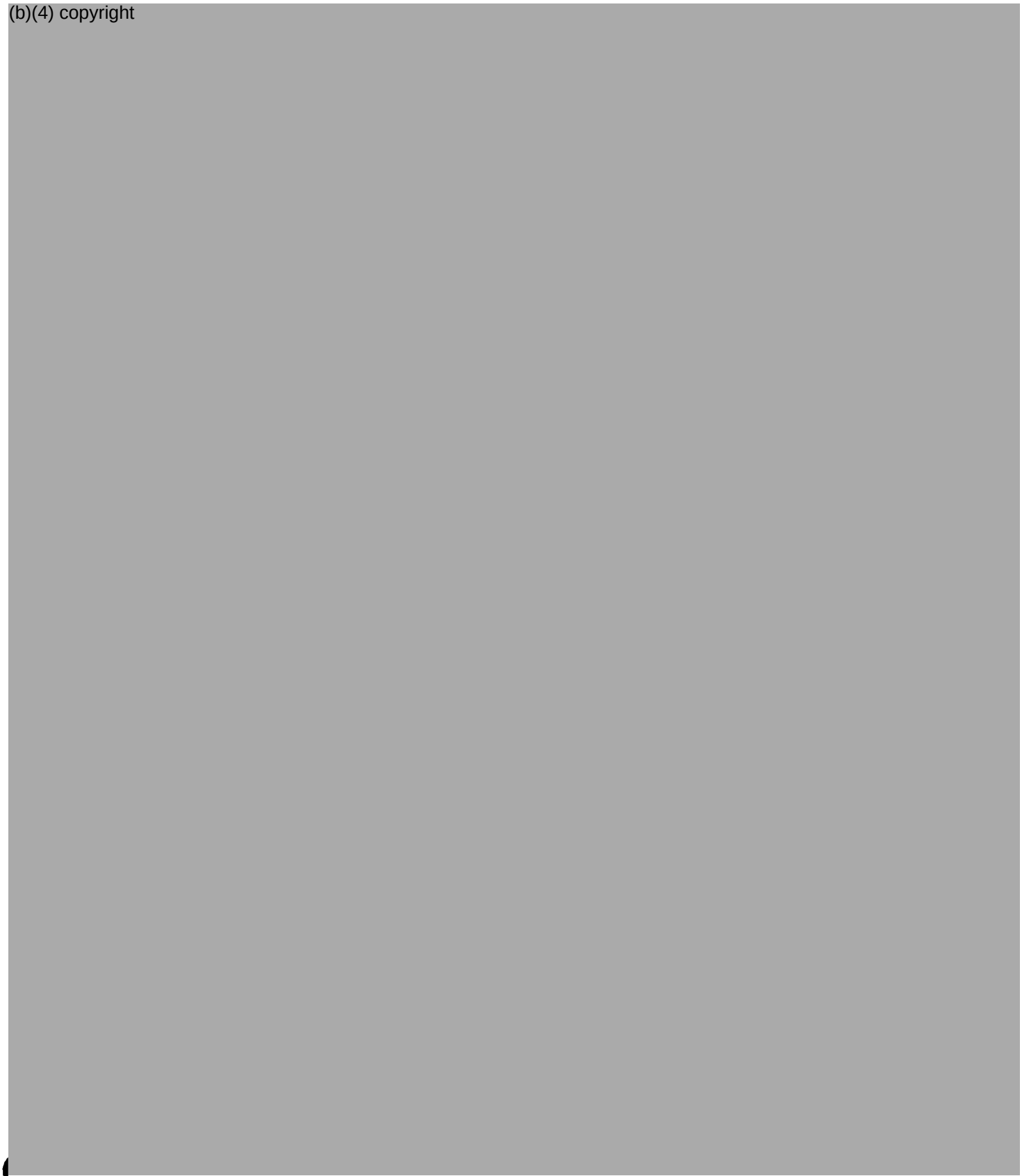

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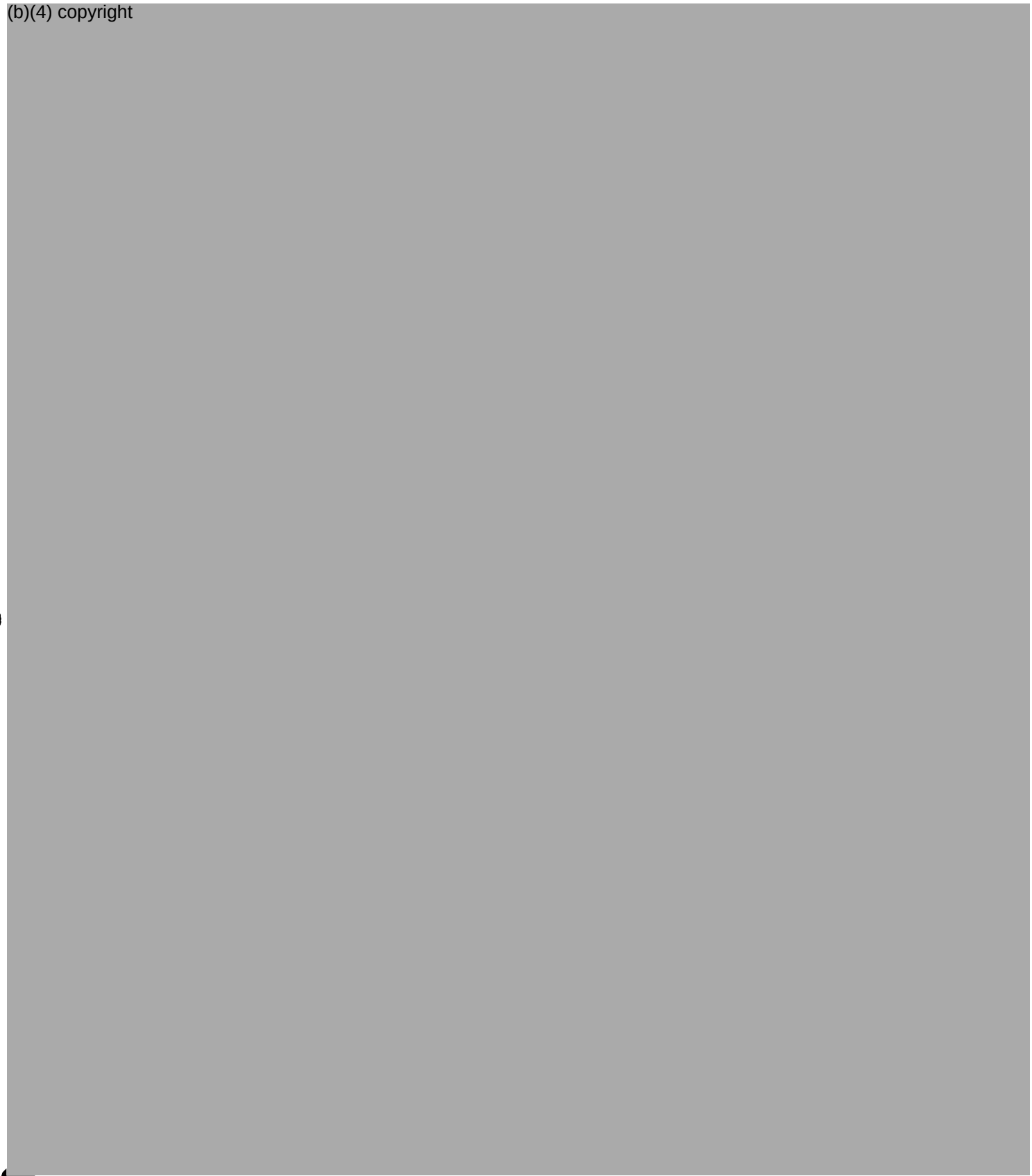

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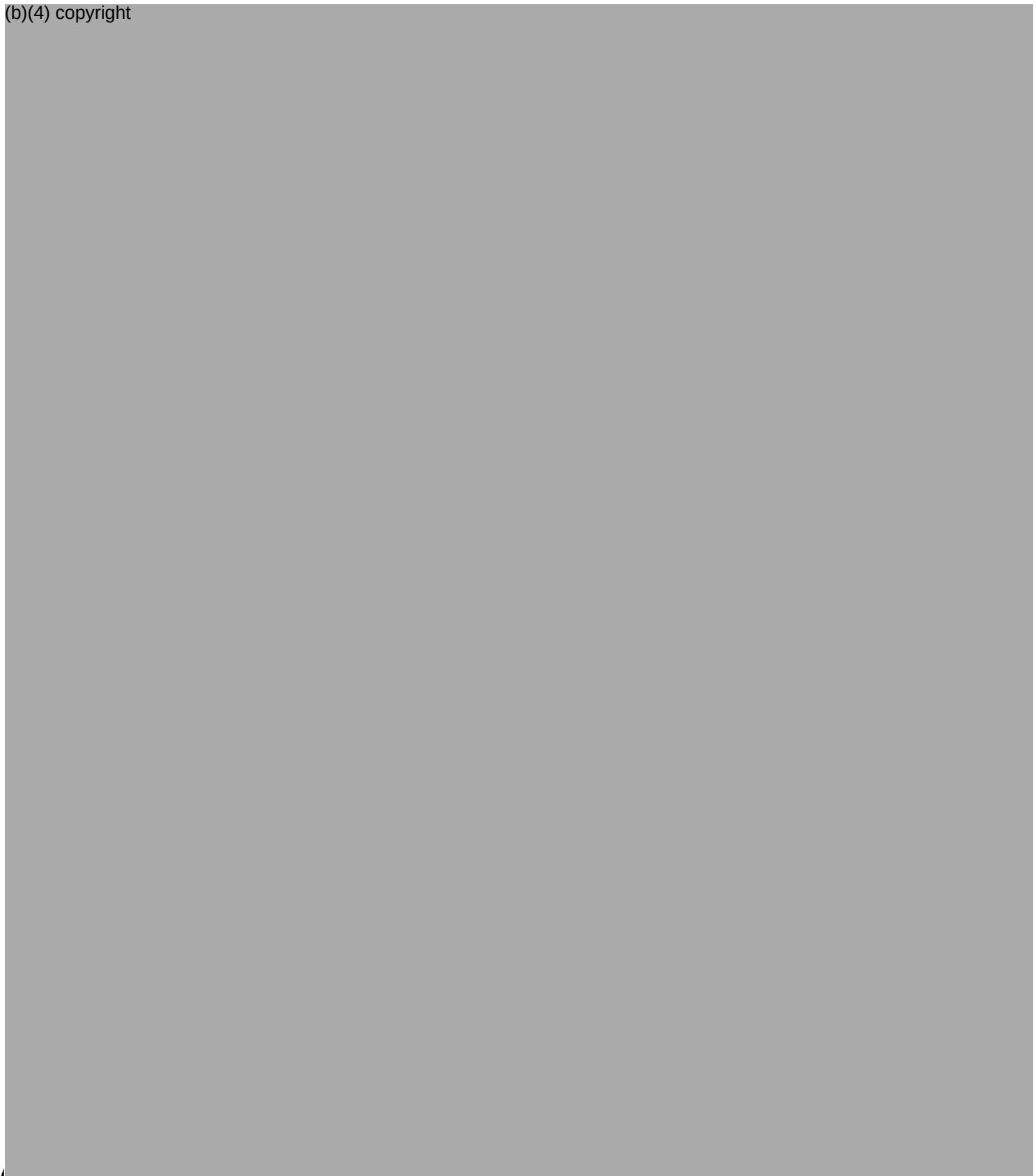

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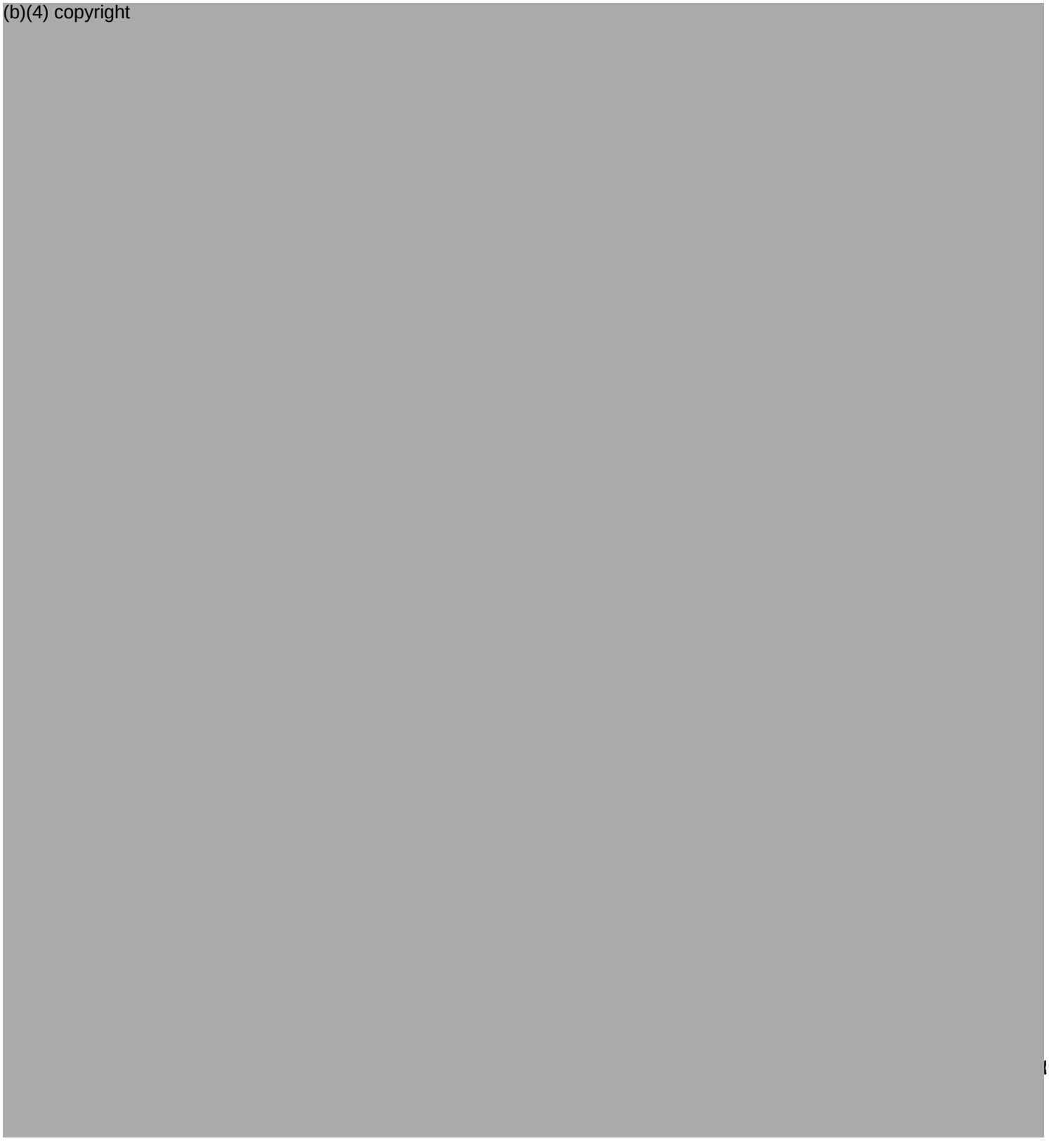

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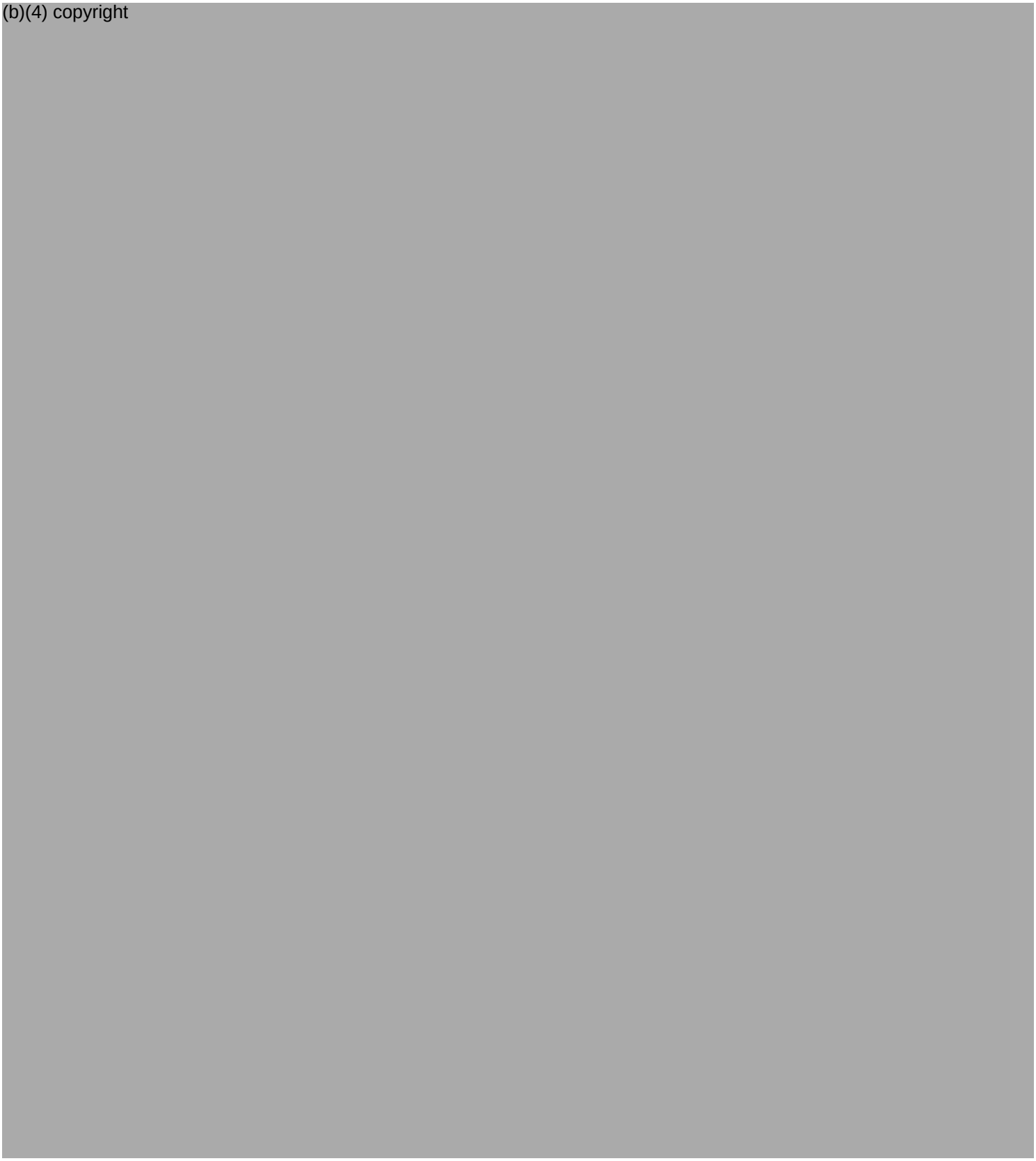

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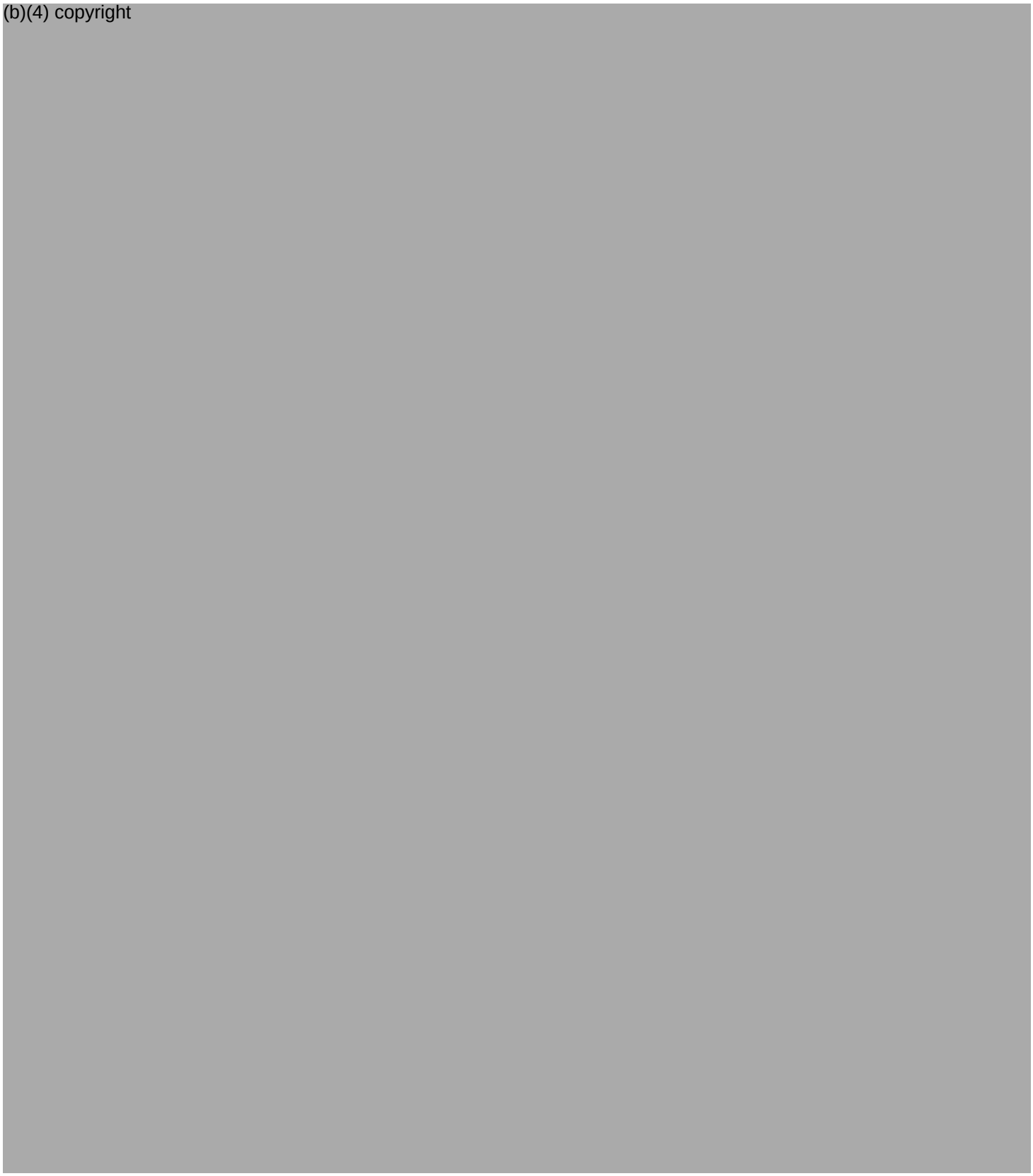

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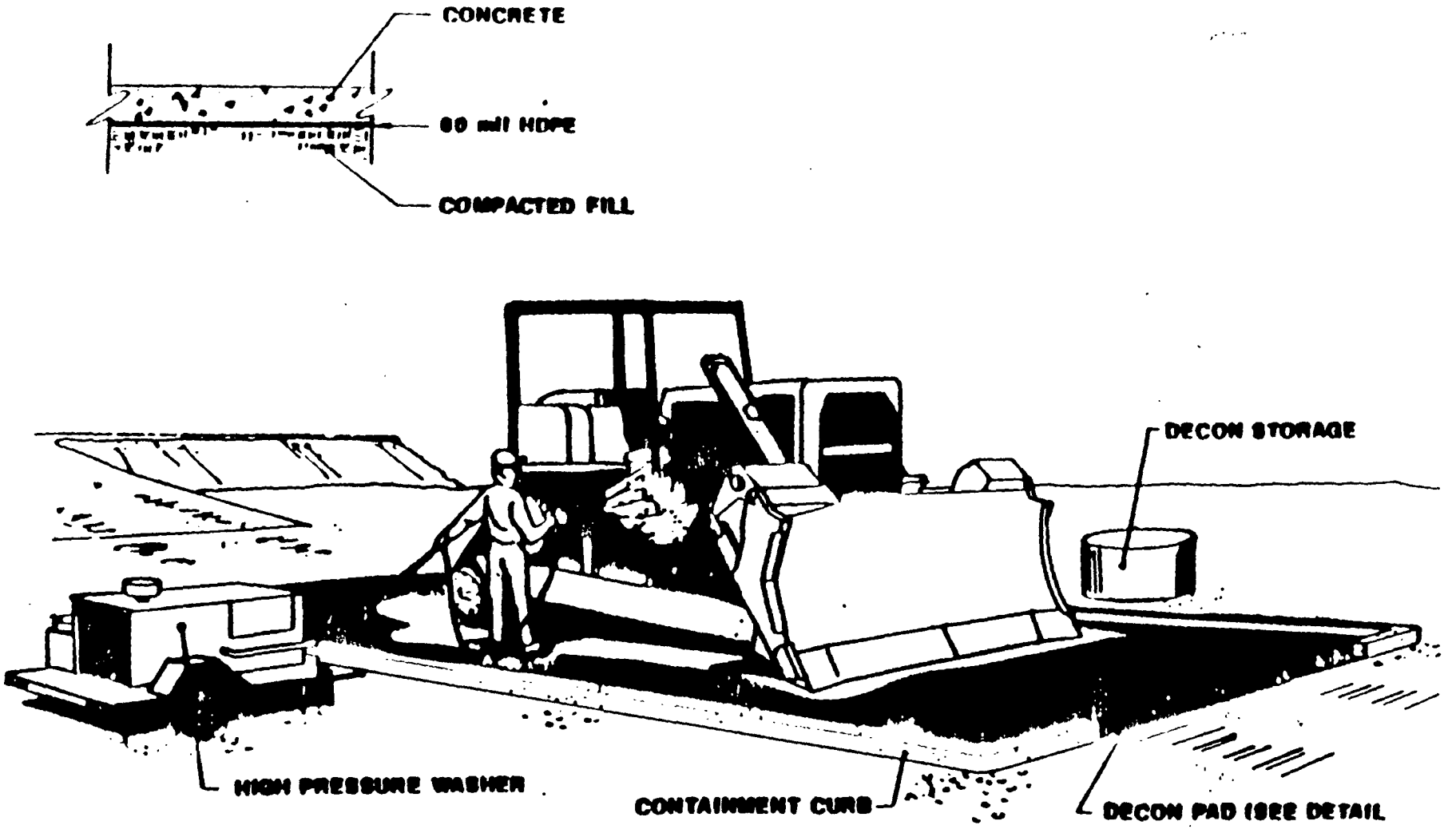
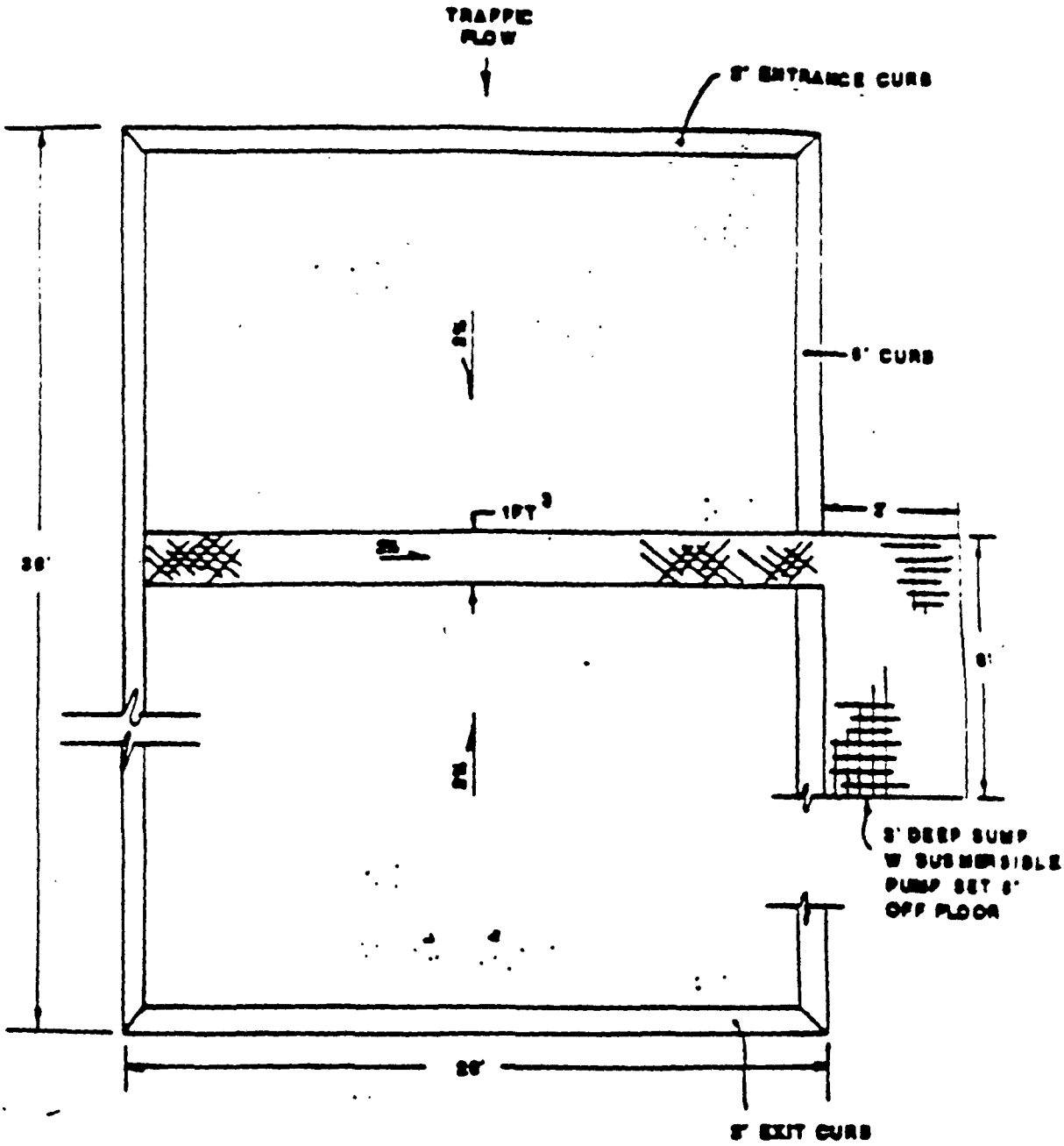


Exhibit 1

Chemical Waste Management, Inc.
ENRAC Division

CONCEPTUAL VIEW OF DECON

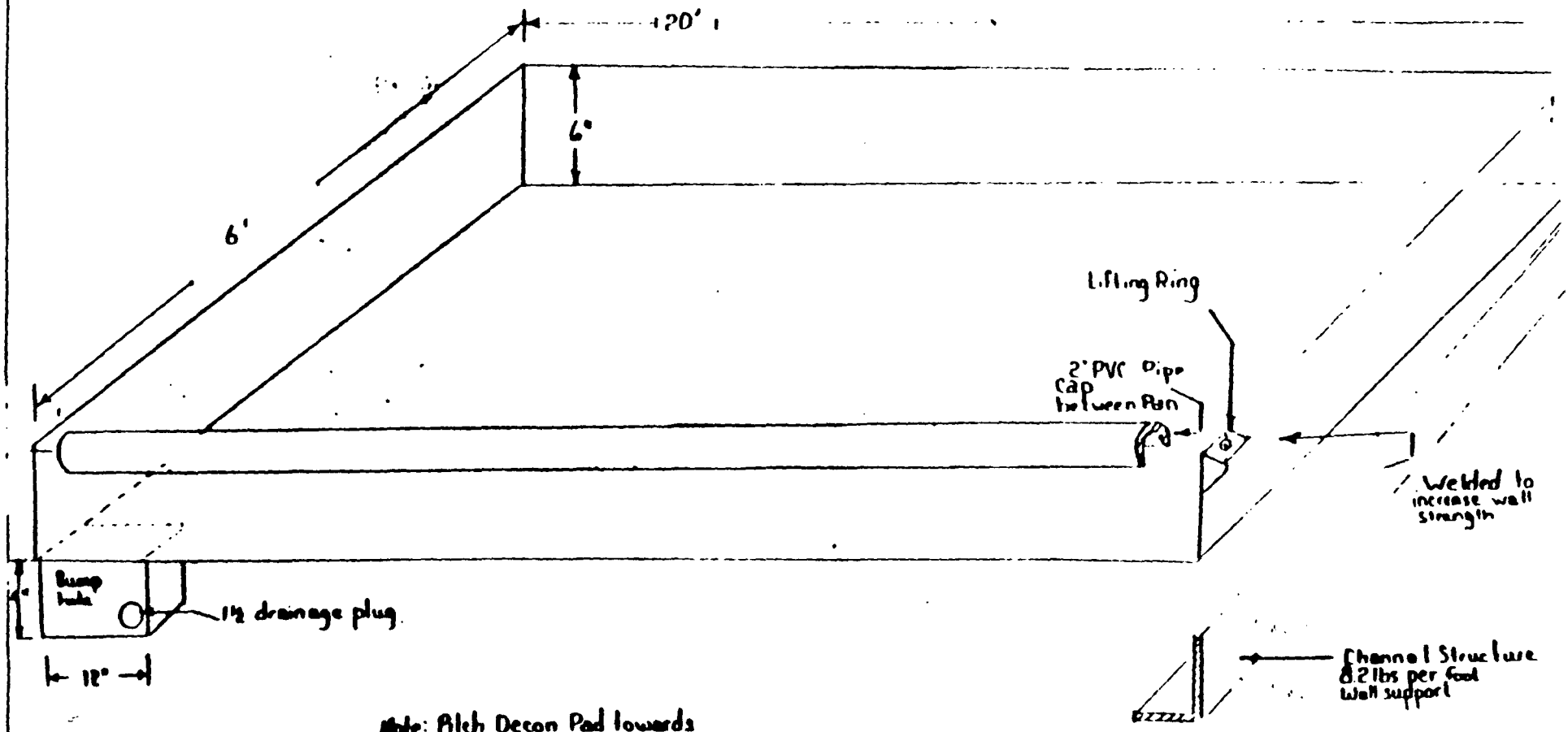


EQUIPMENT DECON PAD

Exhibit 2

Exhibit 3

Optional Lifting Rings
Can be welded to the
Outside of the 3ur foot sections



Note: Pitch Decon Pad towards
drainage sump hole
During Set up

Note: PVC Pipe is slotted to fit
over the top of the two Pans
to prevent Leaking

Portable Decon Pan (Require 2 pans per pad)
3/16 Plate Steel

Name by Bruce McLaughlin
Date July 23 1993

13

PRESSURE WASHER PROCEDURES

1. PRIOR TO STARTING THE PRESSURE WASHER

   a. Check the oil level in the pump and in the engine.
   b. Check that the gas tank is full.
   c. Make sure that the water is turned on.
   d. Inspect the entire pressure washer, including the hoses and wand for loose nuts and bolts or excessive wear. If a part is starting to wear inform your project coordinator so the replacement can be ordered.
   e. Make sure you are wearing the proper protective equipment prescribed in the Health and Safety or EMD approval plan. The minimum eye protection is a full face respirator or goggles and a face shield.
   f. Insure that the proper tip for washing is on the wand.

   NOTE: A blasting tip should not be used because it can cause severe injuries to personnel and damage to equipment. A spray tip with a 15^0 to 45^0 spray angle should be used.

2. PRESSURE WASHER OPERATION

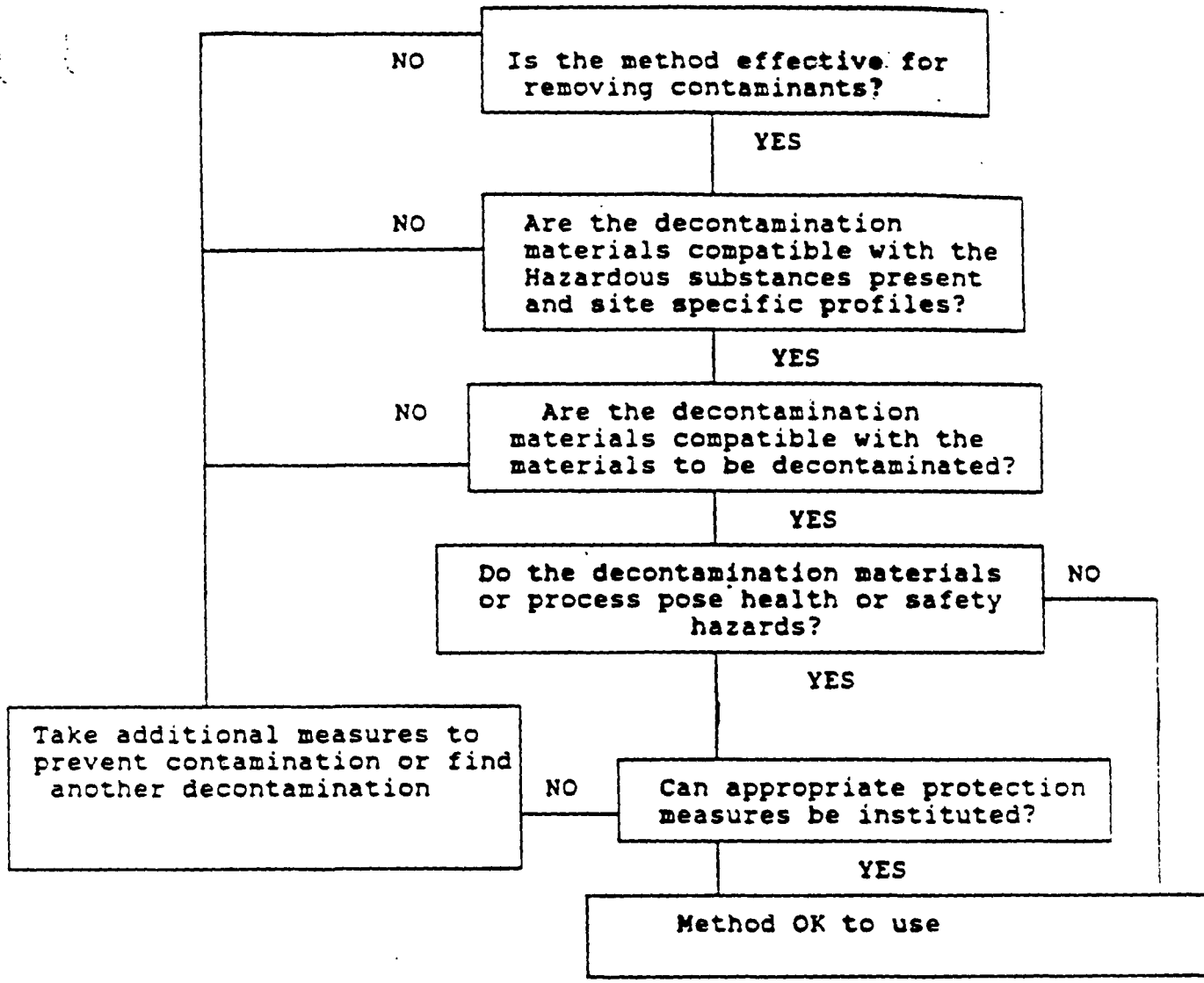
   a. Make sure water is going through the wand.
   b. Start the pressure washer.
   c. Never spray toward anyone.
   d. Always use two hands on the wand at all times.
   e. Never use your hands or feet to secure an item to be sprayed.
   f. Never have anyone else hold an item with their hands or feet while you spray it.
   g. Do not use the pressure washer to wash your boots or gloves.
   h. If the tip, wand or any other part of the pressure washer requires maintenance or cleaning, the pressure washer will be turned off first.

   NOTE: On some jobs a low-pressure pressure washer may be used for boot decontamination. Never use the equipment decontamination pressure washer for personal decontamination.

3. AFTER USE

   a. Note any defects or worn parts and inform your supervisor.
   b. Roll up all hoses
   c. Turn off the water
   d. Make sure the unit is ready for the next time it is needed, you may not be the one using it.
   e. Make sure the gas tank is full and the oil levels are proper and that the pressure washer is stored properly.

Exhibit 4



Decision Aid for Evaluating Health and Safety Aspects of Decontaminatio
Methods

Exhibit 5

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

PROPER D.O.T.
SHIPPING NAME _____

_____

_____

_____

_____

HAZARDOUS PROPERTIES/DESCRIPTION: _____

_____

_____

_____

GENERATOR INFORMATION: TELEPHONE _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

EPA ID NO(S). _____ EPA WASTE NO.(S): _____ STATE WASTE CODE: _____

ACCUMULATION START DATE _____ MANIFEST DOCUMENT NO. _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

Printed by Mesa Label Express 8525 Aeroni Ste T, San Diego CA 92126 (619) 693-4988

Exhibit 6

CERTIFICATION OF DECONTAMINATION

DATE:_____

TIME:_____

LOCATION OF DECONNING:_____

TYPE OF EQUIPMENT DECONNED:_____ SERIAL #_____

All parts of the equipment must be cleaned of contaminates before returni it to the rental company or the Newark Facility. If the equipment was us at a site where PCB's or other sited contaminates noted in the EMD we present, this certificate must contain the Laboratory's findings.

AXLES CLEANED _____FRAME CLEANED _____BUCKET CLEANED _____TIRES CLEANED _
BODY CLEANED _____PROPER FLAG _____

INDICATE OTHER AREAS CLEANED:_____

_____

_____

INSPECTED BY:_____

Name of Owner or Renter:_____

_____

_____

Contaminates Contacted on Site: _____

Decontamination Solution(s) Used: _____

Decontamination Process (describe):_____

SAMPLING LOCATIONS, (If Required) :

Analytical Results (If Required)

SAMPLE#	Date Sampled	Results	ACTION LEVEL

OK to Demob (off-site) _____yes _____no

Project Manager _____/Date:_____

Equipment received and inspected by:_____

Exhibit 7

APPENDIX D

JOB SAFETY ANALYSIS

1.0 PURPOSE

To define minimum company requirements and responsibilities to identify, analyze and control potential hazards or risks associated with specific job tasks and equipment operation with the goal of preventing occupational injuries and illnesses.

2.0 SCOPE

This procedure is applicable to all operations.

3.0 RESPONSIBILITIES

3.1 Each division is responsible for implementing a JSA Program consistent with this procedure and completing a job safety analysis for each job task which has potential hazards which could cause injury or illness.

3.2 The Division Health and Safety Manager is responsible for assigning a risk factor to the potential hazard identified based on incident probability of occurrence and severity of consequence. This risk factor will be used in establishing priorities for completion of the recommended control measures.

3.3 The Division Health and Safety Manager is responsible for tracking JSA recommendations and responses until completed.

4.0 REQUIREMENTS

4.1 Each division shall have a written Job Safety Analysis procedure which follows these general guidelines:

4.1.1 Prioritize tasks for analysis beginning with tasks with a high incident frequency and severity potential, or new previously unanalyzed jobs. As a minimum, the job tasks and/or equipment listed in 4.5 must be analyzed and reviewed with each employee prior to their participation in the job activity.

4.1.2 Break the job task down to its principal component parts and list in sequential order on the JSA form (Appendix A or equivalent). Identify and record all potential hazards and risks, such as:

- Exposure hazards
- Material handling hazards
- Slip/fall hazards
- Strike against/struck by hazards
- Caught in, by, or between objects

4.1.3 Select an employee to observe performing the job task. View the task being performed as many times as necessary to ensure all potential hazards have been identified.

4.1.4 Review recorded observations with the employee to ensure all steps were included and note any deviations from normal practice.

4.1.5 List on the JSA form, effective solutions for the potential hazards identified, such as:

- Eliminate the specific hazard by installing guarding, ventilation, interlocks, enclosure, etc.
- Provide or modify equipment which will reduce exposure to or contact with hazard (e.g., mechanical lifting, handling, or mixing equipment).
- Change physical conditions or layout of job requirements.
- Reduce the frequency of the job activity.
- Substitute less hazardous materials.
- Increase personal protective equipment.

4.3 The JSA shall be reviewed during any accident or incident investigations. Divisions shall annually review job classifications and job tasks associated with it and prioritize job tasks to be analyzed based upon accident experience or perceived risk.

4.4 Completed JSA's shall be integrated into existing SDP's within 30 days and new SDP's as they are developed.

4.5 The following job tasks and/or equipment are recognized as being hazardous through company experience and must be analyzed through the JSA process and reviewed with each employee assigned to the job:

- high pressure washing systems
- crane operations
- transferring flammable or corrosive chemicals to or from containers
- trenching or excavation
- fork-lift truck operation
- sampling trucks or railcars
- splitting, cutting or puncturing drums
- use of utility knives
- operation of vacuum trucks
- lab pack or re-pack operations
- drum mucking
- pond sampling
- activities involving direct employee handling of uncontainerized waste

(APPENDIX A)

RUST REMEDIAL SERVICES, INC.

JOB SAFETY ANALYSIS

POSITION TITLE: _____ DEPT./AREA: _____ DATE: _____

JOB: _____ SDP NO.: _____ PAGE _____ of _____

TASK/STEP NUMBER	TASK OR STEP	POTENTIAL HAZARDS IDENTIFIED	RECOMMENDED CONTROL MEASURES

PREPARED BY: _____

TITLE: _____

SIGNATURE: _____

APPENDIX D

RESPIRATORY PROTECTION PROGRAM

Respiratory Protection Program
RUST Remedial Services, Inc. - Western Region

I. Purpose

OSHA respiratory protection standards are intended to ensure that use of respirators in the workplace occurs in a safe and healthful manner. The following program describes standard operating procedures for the selection and use of respirators at RUST. The Region Health and Safety Manager is designated as the Program Administrator. This programs will be reviewed and updated by the Region Health and Safety Manager and the Health and Safety staff at least annually or whenever applicable standards change.

II. Respirator Selection Criteria

A. The following criteria are used in selecting respirators:

- Chemical, physical and biological hazards present;
- Work operations to be performed;
- Potential routes of exposure;
- Concentrations of contaminants present; and
- Respirator characteristics, capabilities, and limitations.

Only NIOSH/MSHA approved respirators are used by RUST.

B. The Health and Safety staff determine which respirators are used for each work operation. Job-specific respiratory protection is described in the Health and Safety Plan for each project. All non-routine work operations are reviewed for respiratory and protective clothing requirements before the work begins.

C. RUST maintains corporate contracts with its respirator suppliers. Under these agreements, RUST purchases Scott or MSA brand respirators, cartridges, filters, self-contained breathing apparatus, airlines and replacement parts. All respiratory protective equipment is purchased under the direction of the Health and Safety staff. Changes in brand, style or type of equipment in use must first be approved by one of these individuals.

D. Only Grade D breathing air or better is used in supplied-air respirators. Monthly air quality checks are performed on samples of breathing air at RUST projects. Verification of breathing air quality testing is also requested from breathing air suppliers.

III. Employee Training

A. All new employees receive respirator training as part of their initial training. This material is presented before employees are allowed to work with a respirator. Employees receive basic safety and respirator training at least annually thereafter.

B. Respirator training covers both air-purifying and air-supplied respirators. Topics include, but are not limited to:

- Selection criteria, use and limitations of each type of respirator;
- Fit testing procedures;
- Donning and removal procedures;
- Care and cleaning of respirators;
- Inspection and maintenance procedures;
- Medical or physical conditions which would preclude an employee from wearing a respirator; and
- Use of respirators in emergency situations.

C. Each potentially exposed employee is issued a full face and/or half-face air-purifying respirator during his initial training. Appropriate cartridges, filters or supplied-air fittings are issued to each employee on a daily basis according to the requirements of his work assignment.

D. All potentially exposed employees receive qualitative fit tests with an irritant smoke during their initial and annual respirator training. Employees are not permitted to have any facial hair which interferes with the sealing surface of their respirators.

E. Contact lenses are not permitted to be worn with respirators if airborne contaminants result in eye irritation. Temple bar eyeglasses are not permitted to be worn with full-face respirators. Employees requiring prescription eyeglasses will be provided with special respirator glasses at RUST's expense.

IV. Medical Monitoring

A. All employees receive a pre-employment medical examination which includes, but is not limited to:

- Medical and occupational history,
- Physical exam,
- Urinalysis,
- Complete blood count,
- Urinary drug screening,
- Chest X-ray, and
- EKG (for those over 39 yrs. old).

Potentially exposed employees who are required to wear respiratory protective equipment and/or protective clothing, also receive pulmonary function tests and audiograms as part of their physical exams.

APPENDIX E

PROCESS SAFETY REVIEW

1.0 PURPOSE

To define minimum company requirements and responsibilities for systematically identifying, understanding and controlling chemical process hazards which could cause injuries, property damage or significant harm to the environment.

2.0 SCOPE

This procedure is applicable to all operations with chemical processes covered by 29 CFR 1910.119 or which could result in an uncontrolled reaction, emission, fire, explosion or release to the surrounding environment.

3.0 RESPONSIBILITIES

3.1 Corporate Safety and Industrial Hygiene is responsible for providing guidance and technical assistance to region coordinators and division Process Safety Review Teams and acting as members of major incident review teams as needed.

3.2 The Region Vice President is responsible for allocating the necessary resources to complete process safety reviews in compliance with the OSHA Chemical Process Safety Standard and corporate guidelines and directives and assigning a Region Process Safety Coordinator.

3.3 The Region Process Safety Review Coordinators are responsible for training and assisting divisional Process Safety Review Teams and tracking their progress in completing their process safety reviews.

3.4 The Division Manager is responsible for assigning personnel to participate in Process Safety Review Teams and to respond to their recommendations.

4.0 REQUIREMENTS

4.1 All projects for new processes or any process modification shall be reviewed and approved by the Region Health and Safety Manager or his/her designee.

4.2 A pre-startup inspection for health and safety hazards shall be conducted on all new or modified processes as described in the Procedure 28.

4.3 Each site shall conduct an initial site walk-through to identify the potential process safety hazards which fall under the scope of this procedure.

4.4 A process safety review team shall be established which should be comprised of multi-disciplined division personnel and led by an individual experienced in process safety from the division or region. At least one team member should be expert in the process being reviewed.

4.5 The necessary information on the processes being reviewed should be assembled or developed. At a minimum, the following information should be collected for each process being reviewed:

4.5.1 Information pertaining to the hazards of the highly hazardous chemicals.

4.5.2 Information pertaining to the technology of the process such as block flow diagram or process flow diagram, process chemistry, intended inventory, etc.

4.5.3 Information pertaining to the equipment in the process such as materials of construction, piping and instrument diagrams, electrical classification, etc.

4.5.4 Information pertaining to operations including operating procedures, procedural controls, SDP's, training lesson plans and records, emergency procedures, past incident reports, JSA's, etc.

4.6 The process safety review team shall prioritize the processes to be reviewed according to the hazard risk and conduct the What-If/Checklist review of the process beginning with the process judged to be the most hazardous in accordance with company guidelines (attachment A).

4.7 The results shall be recorded including the What-If question, consequence/hazard and the recommendation. The results shall be reviewed with the appropriate region and division personnel and management.

4.8 Action plans and resolution schedules for all recommendations identified in the analysis shall be implemented and tracked by the Division Manager and the Region Health and Safety Manager with status reports sent to the Region Vice President.

4.9 Written Standard Division Procedures (SDPs) shall be developed for each process which addresses:

- Initial Startup
- Normal Operations
- Temporary Operations
- Emergency Operations and Shut-down
- Normal Shut-down
- Consequences of Deviation from the SDP
- Health and Safety Considerations

4.10 Employees shall be trained on the SDPs for the operations in which they work initially and, at a minimum, every three years or whenever the SDP changes. This training shall be documented.

4.11 Each process shall be re-evaluated each time an equipment change is made, a new chemical hazard is introduced, at the time of an incident or, minimally, every five years.

4.12 Contractors working on or near the process shall be informed of the potential hazards related to the work the contractor is performing. See Procedure 8, Visitor and Contractor Safety, for additional requirements.

4.13 The site shall anticipate potential emergency situations and develop action plans to respond to those emergencies.

(ATTACHMENT A)

PROCESS SAFETY REVIEW CHECKLIST FOR HAZARDOUS WASTE SITE OPERATIONS

NOTE:	***Consider the check list in terms not only of steady-state operation, but also start up, shutdown, and upsets of all conceivable types***

I. WASTE STREAMS/REAGENTS

1. What waste streams/reagents are unstable or spontaneously ignitible?

   a. What evaluation has been made of impact sensitivity?

   b. Has an evaluation of possible uncontrolled reaction or decomposition been made?

2. What data are available on amount and rate of heat evolution during decomposition of any material in the process?

3. What precautions are necessary for flammable materials?

4. What flammable dust hazards exist?

5. What waste streams/reagents are highly toxic?

6. What has been done to assure that materials of construction are compatible with the chemical process materials that are involved?

7. What maintenance control is necessary to assure replacement in kind, e.g., to avoid excessive corrosion, to avoid producing hazardous compounds with reactants?

8. What changes have occurred in composition of waste streams and what resulting changes are in process? (i.e., concentration, ph, components)

9. What measures are in place to assure incoming waste streams are sufficiently and properly identified?

   - Qualitative Analysis
   - Quantitative Analysis
   - Physical Characterization
   - Personnel Training

10. What hazards can be created by failure to identify all components of a waste stream.

11. What hazards can occur as a result of loss of gas for purging, blanketing, or inerting? How certain is gas supply?

12. What precautions need to be considered with respect to the stability of waste streams in storage? (i.e., compatibility, reactivity, polymerization)

13. What fire extinguishing agents are compatible/incompatible with waste streams? (i.e., H_2O on water reactives)

14. What fire emergency equipment and procedures are being provided?

II. REACTIONS

1. How are potentially hazardous reactions isolated?

2. What unwanted hazardous reactions can be developed through process conditions or contaminated equipment? (i.e., tanks, lines, vessels, transfer equipment, vacuum trucks, etc.)

3. What combustible mixtures can occur within equipment? (i.e., flash point greater than 100°F)

4. What precautions are taken for processes operating near or inside the flammable limits?

5. What are process margins of safety for all reactants and intermediates? (i.e., BTUs, concentration, feed rates)

6. What reaction rate data are available for normal, or abnormal reactions?

7. How much heat must be removed for normal or abnormal potential exothermic reactions?

8. How thoroughly is the chemistry of the process known? (See NFPA "Manual of Hazardous Chemical Reactions.")

9. What unknown contaminants can create additional process hazards?

10. What provision is made for rapid disposal of reactants if required by plant emergency?

11. What hazardous reactions could develop as a result of mechanical equipment (pump, agitator, etc.) failure?

12. What hazardous process conditions can result from gradual or sudden blockage in equipment?

13. What waste streams or process materials can be adversely affected by extreme weather conditions?

14. What process changes have been made since the previous process safety review?

III. EQUIPMENT

1. Are any venting systems manifolded, and if so, what hazards can result?

2. What procedure is there for assuring adequate liquid level in liquid seals?

3. What is the potential for external fire which may create hazardous internal process conditions?

4. Is explosion suppression capability needed for any site process equipment.

5. Where are flame arresters and detonation arresters needed?

6. In confined areas, how is open fired equipment protected from spills?

7. What safety control systems are maintained over storage areas? (i.e., fire suppression, electrical classifications, etc.)

8. Are sight glasses on reactors provided only where positively needed? On pressure or toxic reactors, are special sight glasses provided which have a capability to withstand high pressure?

9. What emergency valves and switches cannot be reached readily?

10. When was pertinent equipment, especially process vessels, last checked for pressure rating?

11. What hazards are introduced by failure of agitators?

12. What plugging of lines can occur and what are the hazards?

13. What provisions are needed for complete drainage of equipment or safety in maintenance?

14. What air flow calculations and system efficacy tests have been performed on exiting ventilation systems to ensure adequate functioning.

15. What provisions have been made for dissipation of static electricity to avoid sparking?

16. What requirements are there for concrete bulkheads or barricades to isolate highly sensitive equipment and protect adjacent areas from disruption of operations?

IV. INSTRUMENTATION CONTROL

1. What hazards will develop if all types of motive power used in instrumentation should fail nearly simultaneously?

2. If all instruments fail simultaneously, is the collective operation still fail-safe?

3. What provision is made for process safety when an instrument, instrumental in process safety as well as in process control, is taken out of service for maintenance? When such an instrument goes through a dead time period for standardization or when, for some other reason, the instrument reading is not available?

4. What has been done to minimize response time lag in instruments directly or indirectly significant to process safety? Is every significant instrument or control device backed up by an independent instrument or control operating in an entirely different manner? In critical processes, are these first two methods of control backed up by a third ultimate safety shutdown?

5. Has the process safety function of instrumentation been considered integrally with the process control function throughout plant design?

6. What are the effects of extremes of atmospheric humidity and temperature on instrumentation?

7. What gauges, meters, or recorders cannot be read easily? What modifications are being made to cope with or solve this problem?

8. Is the system completely free of sight glasses or direct reading liquid level gauges or other devices which, if broken, could allow escape of the materials in the system?

9. What is being done to verify that instrument packages are properly installed? Grounded? Are the instruments properly designed for their environment?

10. What procedures have been established for testing and proving instrument functions?

11. What periodic testing to check performance and potential malfunction is scheduled?

V. OPERATIONS

1. When were the written operating procedures last reviewed and revised?

2. How are new operating personnel trained on initial operation and experienced operating personnel kept up-to-date on plant operating procedures, especially for start up, shutdown, upsets, and emergencies?

3. What emergency valves and switches cannot be reached readily? What procedures are there to cope with these situations?

4. What safety precautions are needed in loading liquids into, or withdrawing them from tanks? Has the possibility of static electricity creation been adequately taken care of?

5. What process hazards are introduced by routine maintenance procedures?

6. What evaluation has been made of the hazards of sewered materials during normal and abnormal operation?

7. How dependable are supplies of inerting gas and how easily can supplies to individual units be interrupted?

8. What safety margins have been narrowed by revisions of design or construction in efforts to debottleneck operations, reduce cost, increase capacity, or improve quality?

9. What provisions does the operating manual have for coverage of start up, shutdowns, upsets and emergencies?

10. What economic evaluation has dictated whether a batch process or a continuous one is used?

VI. MALFUNCTIONS

1. What hazards are created by the loss of each feed, and by simultaneous loss of two or more feeds?

2. What hazards result from loss of each utility, and from simultaneous loss of two or more utilities?

3. What is the severest credible incident, i.e., the worst conceivable combination of reasonable malfunctions, which can occur?

4. What is the potential for spills and what hazard should result from them?

VII. ELECTRICAL SAFETY REVIEW CHECKLIST

A. Design

1. How completely does the electrical system parallel the process?

   a. What faults in one part of the plant will affect operation of other independent parts of the plant?

   b. How are instruments for a plant protected from faults or other voltage disturbances?

2. Are interlocks and shutdown devices made fail-safe?

   a. What is the need for each interlock and shutdown?

   b. Are interactions and complications minimized?

   c. Is continued use of protective devices ensured?

   d. What requirements, standards, or codes were used in selecting the hardware?

3. How has the area NEC classification been established and hardware and techniques selected?

   a. What process details affect the classification, group, and division?

   b. Are any new techniques being applied on this job?

4. Is the electrical system simple in schematic and physical layout so that it can be operated in a straightforward manner? (This minimizes human error in switching for isolation and load transfer.)

5. What electrical equipment can be taken out of service for preventive maintenance without interrupting production? How?

6. How is the electrical system instrumented so that equipment operation can be monitored? Will this eliminate downtime due to equipment failures caused by unknown overloading?

7. What are the overload and short circuit protective devices?

   a. Are they located in circuits for optimum isolation of faults?

   b. What is the interrupting capacity?

   c. How are they coordinated?

   d. What instructions are furnished for field testing on installation and for testing during the life of the equipment?

8. What bonding and grounding is provided?

   a. Does it protect against static buildup?

   b. Does it provide lightning protection?

   c. Does it provide for personnel protection from power system faults?

9. Is lighting adequate?

   a. Adequate for safe normal operation?

   b. Adequate for normal running maintenance?

   c. Adequate for escape lighting during power failure?

10. Is tankage grounding coordinated with cathodic protection?

11. Are power disconnects, starters, etc. accessible during mishaps?

12. Is communication provided to operate a complex safely (telephones, radios, signals, alarms, etc.)?

13. Are spacings and clearances furnished for normal traffic maintenance, and for fire fighting?

14. Is there a schedule for checking operability of interlocks?

15. Where sequence controllers are used, is there an automatic check, together with alarms, at key steps after the controller has called for a change, and is there a check together with alarms at key steps before the next sequence changes?

VIII. BOILER AND MACHINERY CHECKLIST

A. Boilers

1. Safety Valves

   a. Are long and large vent lines supported?

   b. What drain connections are provided?

   c. Is first drum valve set to relieve boiler working pressure?

   d. Is the last drum valve set to pop at or below 103 percent of boiler working pressure?

2. Blow-off Piping

   Is steel piping of next higher gauge than required for boiler pressure, have we avoided sharp radius ells, and have we sloped all lines and drained all low points in the system?

3. Feedwater Piping

   Is the bypass around the feedwater regulator accessible from the operating level and located where the drum level gauge glass can be seen? Are electrically-driven feedwater pumps duplicated by steam-driven pumps?

4. Steam Outlet Piping

   a. Are there separate non-return and header stop valves where two or more boilers discharge into the same piping system?

   b. Is there a visible free blow and drain in piping between non-return and header stop valves?

   c. Are there condensate drain provisions for all sections of piping?

   d. Is there adequate piping expansion flexibility? How is piping supported?

5. Drum Water Level - Attended Operation

   a. Are there both high and low water alarms?

b. Is there a low water cut-off of gas or oil burners? (If drop or loss of plant steam pressure does not jeopardize process safety.)

c. Is gauge glass visible from feedwater regulator bypass valve?

d. Is remote drum level gauge independent of drum level controls?

6. Drum Water Level - Unattended Operation

a. Are high and low boiler water levels monitored?

b. Are two independent low water level switches interlocked with gas or oil burner safety shut-off valves?

7. Gas Burner Control and Piping - General

a. What type of plug cocks have been provided for manual shut-off service?

b. Is there an in-line strainer in the gas line ahead of all regulating and safety shut-off valves?

c. Do you provide for stable gas pressure regulation at all loads? This may require a small regulator in parallel with the full-sized regulator for start-up or low fire service.

d. Is there a double safety shut-off and vent valve arrangement? What type of reset is there for each valve?

e. What type of automatic fuel-air ratio control is used?

f. Is there separate pressure regulation of pilot gas?

g. Is safety control circuit DC, or 120v AC with the safety controls in the ungrounded circuit?

h. Do you ensure positive, tamper-proof time period to provide minimum of 6 air changes in combustion chamber before light-off? Air flow rate during purge should be at least 70 percent of maximum capacity.

i. Are controls or interlocks installed to prevent burner firing rate from being reduced below minimum stable flame?

j. Are controls or interlocks installed to prevent burner light-off when insufficient combustion air flow is present?

k. What interlock is there to assure low-fire burner light-off?

8. Additional gas burner controls and interlocks for unattended operation:

a. Is main burner flame monitored?

b. Are following interlocks for safety shut-down furnished?

1. High gas pressure?

2. Low gas pressure?

3. Low combustion air flame?

4. Low boiler water (double switched)?

c. Is there flame scanner response time of 2-4 seconds?

d. Is there tamper-proof programmed light-off sequence to purge, light and prove pilot, light and prove main flame, post purge?

e. How have you set up positioning fuel-air ratio controls?

f. Is there a self-checking feature for flame scanner and flame scanner relay circuitry?

9. Are provisions made in the oil burner controls and piping for each of the following items?

a. Oil line strainer

b. Oil pressure control

c. Heater for heavy oil

d. Single safety shut-off valve

e. Start-up recirculating line for heavy oil

f. Positive fuel-air ratio control

g. Low oil pressure alarm or interlock

h. Low oil temperature alarm or interlock for heavy oil

i. Low atomizing steam pressure alarm or interlock

j. Positive purge cycle and low fire start controls

k. Interrupted pilot

10. Additional oil burner controls and interlocks for unattended operation:

a. Are interrupted and proved pilot and monitoring of main oil burner flame with interlock to close safety shut-off valve during flame failure provided?

b. Are the following interlocks in use for safety shut-down of burners?

1. Low oil temperature--for heavy oils?

2. Low oil pressure?

3. Low combustion air flow?

4. Low atomizing steam pressure?

5. Low boiler water (double switched)?

c. Is a tamper-proof programmed light-off sequence provided?

d. Are positioning fuel-air ratio controls used?

B. Piping and Valves

1. Were piping systems analyzed for stresses and movement due to thermal expansion?

2. Are piping systems adequately supported and guided?

3. Are piping systems provided for anti-freezing protection, particularly cold water lines, instrument connections and lines in dead-end service such as piping at standby pumps?

4. Are provisions made for flushing out all piping during start-up?

5. Are non-rising stem valves being avoided?

6. Are double block and bleed valves used on emergency interconnections where possible cross-contamination is undesirable?

7. Are controllers and control valves readily accessible for maintenance?

8. Are bypass valves readily reached for operation? Are they so arranged that opening of valves will not result in an unsafe condition?

9. Are all control valves reviewed for safe action in event of power or instrument air failure?

10. Are means provided for testing and maintaining primary elements of alarm and interlock instrumentation without shutting down processes?

C. Pressure and Vacuum Relief

1. What provisions are there for flame arresters on discharge of relieve valves or rupture discs on pressurized vessels?

2. What provisions are there for removal, inspection, and replacement of relief valves and rupture discs, and what scheduling procedure?

3. What need is there for emergency relief devices: breather vents, relief valves, rupture discs, and liquid seals? What are the criteria for sizing these devices?

4. Where rupture discs are used to prevent explosion damage, how are they sized relative to vessel capacity and design?

5. Where rupture discs have delivery lines to or from the discs, what has been done to assure adequate line size relative to desired relieving dynamics? To prevent whipping of discharge end of line?

6. Are discharges from vents, relief valves, rupture discs, and flares located to avoid hazard to equipment and personnel?

7. What equipment operating under pressure, or capable of having internal pressures developed by process malfunction, is not protected by relief devices and why not?

8. Is discharge piping of relief valves independently supported? Make piping as short as possible and with minimum changes in direction.

9. Are drain connections provided in discharge piping of relief valves where condensate could collect?

10. Are relief valves provided on discharge side of positive displacement pumps; between positive displacement compressor and block valves; between back-pressure turbine exhaust flanges and block valves?

D. Machinery

1. Are adequate piping supports and flexibility provided to keep forces on machinery due to thermal expansion of piping within acceptable limits?

2. Are check valves adequate and fast acting to prevent reverse flow and reverse rotation of pumps, compressors and drivers?

3. Are there provisions for draining and trapping steam turbine inlet and exhaust lines?

4. Are there separate visible-flow drain lines from all steam turbine drain points?

5. Are driven machines capable of withstanding tripping speed of turbine drain points?

6. Are non-lubricated construction or non-flammable synthetic lubricants used for air compressors with discharge pressure of greater than 75 psig to guard against explosion?

7. Are provisions made for spare machines or critical spare parts for critical machines?

8. Are there provisions for operation or safe shutdown during power failures?

9. Are vibration switches on alarm or on interlock for cooling tower fans provided?

IX. FIRE PROTECTION CHECKLIST

1. If the building has enclosed walls and the construction or occupancy has combustibles, what kind of automatic sprinklers (wet or dry pipe systems) are provided?

2. If the building has open walls and the construction or occupancy has combustibles, how much water spray protection (HAD's or pilot head heat actuating systems) has been provided?

3. What existing hydrants serve the area or project? What additional ones are to be provided?

4. What fixed or portable monitor nozzles (on hydrants or separate) are provided for coverage of manufacturing facilities or storage facilities in open areas (not within open or closed wall buildings)?

5. Have the underground fire mains been extended or looped to supply additional sprinkler systems, hydrants and monitor nozzles? Dead ends should be avoided. What sectional control valves have been provided?

6. Are small hose standpipes provided inside of buildings?

7. What type, size, location and number of fire extinguishers are needed?

8. What flammable liquid storage tank protection has been provided? Foam? Dikes with drain valves outside the dike?

9. Where have total flooding or local-application carbon dioxide systems been provided?

10. Is load-bearing structural steel which is exposed to potential flammable liquid or gas fires fire-proofed to a sufficient height above ground level to protect the steel? (This height varies from 30' TO 35', depending on additional fire protection features.)

11. How has adequate drainage been provided to carry spilled flammable liquids and water used for fire-fighting away from buildings, storage tanks, and process equipment?

12. What protection has been provided for dust hazards?

13. What is the capacity of fire water supplies? What is the maximum fire water demand?

14. How long will supplies meet this maximum demand?

15. What is the spacing of flammable liquid storage tanks?

16. What is the estimated probable maximum loss (PML)?

17. What is the approximate residual of flammable liquids in the process.

18. What attention has been given to protection of process equipment from external fire?

19. Is the area pad or flooring designed to conduct spill liquid away from process equipment? What type of containment is provided? What hazards does the containment create in a spill situation?

20. How have major storage tanks or vessels been located to minimize hazard to process equipment in the event of rupture or burning?

21. Are all structures constructed of non-combustible materials and fire walls, partitions or barricades provided to separate important property damage values, high hazard operations and units important to continuity of production?

APPENDIX E

HAZARD COMMUNICATION PROGRAM

HAZARD INFORMATION SHEETS

Arsenic
Asbestos
Cadmium
Lead

Hazard Communication Program
RUST Remedial Services, Inc. - Western Region

I. Purpose

Federal and state Hazard Communication regulations are intended to ensure that both employers and employees are aware of the hazards associated with chemical substances contained in products used in the workplace. The following program implements these Hazard Communication regulations for RUST Remedial Services, Inc (RUST) operations. This program is reviewed and updated at least annually or as state and federal regulations change. The Regional Health and Safety Manager is designated as the administrator of this program and is responsible for performing program updates.

II. Material Safety Data Sheets

1. Whenever a new chemical product is ordered by RUST personnel, the employee ordering that product shall contact his supervisor or the Health and Safety Manager to determine whether an MSDS is required.

   Note: For the purpose of Hazard Communication, a "new" product is defined as one which has not been purchased by RUST within 1 year prior to the current date.

2. If an MSDS is required, the Site Safety Officer or the Health and Safety Manager will request one from the product supplier. If the MSDS has not been received within 30 days of the date it is requested, the Health and Safety Manager will notify OSHA in writing and request their assistance in obtaining the MSDS.

3. Copies of all MSDS for products used on site are filed in the project office.

4. The Health and Safety Manager or his designee will review all MSDS on file at least annually, to determine whether they require updating. Updated MSDS will be ordered from product suppliers, as necessary.

5. Whenever a new or revised MSDS is received, the Health and Safety Manager or his designee will provide this new information to affected employees within 30 days of its receipt.

III. Labelling

1. All chemical products used on site shall be labelled, in English, with the names of the hazardous substances that they contain, and appropriate hazard warnings.

2. Manufacturers' labels shall not be removed or defaced.

3. If a manufacturer's label is missing or inadequate, employees are required to contact their supervisor or the Site Safety Officer for a replacement label.

4. Supervisors will review all labels with the Health and Safety Manager at least annually, to ensure that they contain adequate hazard warnings.

5. From time to time, containers may also be labelled with National Fire Protection Association (NFPA) diamonds. An explanation of the NFPA labelling system is attached to this procedure.

IV. Employee Training

1. Existing employees receive Hazard Communication training as part of their annual refresher training. New employees receive Hazard Communication training as part of their New Employee training, before they are allowed to work with hazardous chemical products.

2. Hazard Communication training includes an explanation of the following:

   a. State and federal Hazard Communication regulations;
   b. Rights and responsibilities of employers and employees;
   c. Hazards associated with classes of chemical substances such as flammables, solvents, metals, acids and caustics, reactives and toxics;
   d. How to read an MSDS;
   e. How to read a RUST Profile Sheet for hazardous wastes;
   f. NFPA labels and labelling procedures for chemical products;
   g. Safe work practices and personal protective equipment required for handling hazardous chemical products;
   h. Location and availability of this written Hazard Communication program.

3. Records of Hazard Communication training are maintained by the Health and Safety Manager and are stored in the employee training files.

V. Non-routine Operations

1. Prior to beginning any new or non-routine work operations, a special safety meeting will be held for all affected employees. At this safety meeting, the Site Safety Officer or the Health and Safety Manager will explain the hazards associated with the non-routine operations, and safe work practices and personal protective equipment required to control those hazards.

2. Records of such safety meetings will be maintained in the project-specific files.

VI. Contractor Employees

1. RUST contractors whose employees may be exposed to hazardous chemical products while working for RUST, will be notified of the presence of such products and the manufacturer's suggested protective measures.

2. The Site Safety Officer or supervisor, responsible for the area where the contractor works, will complete this contractor notification.

VII. RCRA Hazardous Wastes

RCRA hazardous wastes are not covered by state or federal Hazard Communication regulations. Information on the hazards associated with these materials may be obtained from the Chemical Waste Managment, Inc. (CWMI) Profile Sheet for each waste. Profile Sheets are available form the Analytical Laboratory at each CWMI treatment, storage or disposal facility.

National Fire Protection Association (NFPA)
Labelling System

The NFPA labelling system uses diamond-shaped labels to identify the hazards associated with various chemical substances. Each diamond is divided into four sections.

The top section is color coded red and contains a hazard rating form 0 to 4, indicating whether the material will burn readily if exposed to fire or other ignition sources. The degrees of flammability hazard ar ranked as follows:

4 Very flammable gases, very volatile flammable liquids , and dusts or mists that readily form explosive mixtures in air. This includes materials which will rapidly vaporize at normal ambient temperatures and pressures. this rating includes any liquid or gaseous material having a flash point below 73 degrees F and a boiling point below 100 degrees F. (Class IA flammables.)

3 Liquids which can be ignited under almost all normal temperature conditions. This rating includes liquids having a flash point below 73 degrees F and a boiling point at or above 100 degrees F; and liquids having a flash point at or above 73 degrees F, but below 100 degrees F . (Class IB and IC flammables.) Water may be ineffective in fighting fires involving these liquids, because of their low flash points. This rating also includes solids which form coarse dusts that may burn rapidly, solids in shredded or fibrous form that can create flash fires, solids that burn rapidly because they contain their own oxygen, and any material that ignites spontaneously at normal temperatures in air.

2 Liquids which must be moderately heated or exposed to relatively high ambient air temperatures before ignition will occur, and solids that readily give off flammable vapors. Water spray may be used to extinguish fires involving these materials because they can be cooled to below their flash points. This rating includes liquids having a flash point above 100 degrees F, but below 200 degrees F; and solids and semisolids which readily give off flammable vapors.

1 Materials which in themselves are normally stable, but which may become unstable at elevated temperatures and pressures, or which may react with water with some non-violent release of energy. Materials which require considerable preheating before ignition can occur. This rating includes liquids, solids and semisolids having a flash point above 200 degrees F; and most ordinary combustible materials. It also includes materials which will burn in air when exposed to a temperature of 1500 degrees F for a period of 5 minutes or less.

0 Materials that will not burn. Materials which are normally stable even under fire conditions and which are not reactive with water. This includes any material which will not burn in air when exposed to a temperature of 1500 degrees F for a period of 5 minutes.

The left-hand section is color coded blue and contains a hazard rating from 0 to 4, indicating whether the material can cause injury from contact with or absorption into, the body. The degrees of health hazard are ranked as follow:

4 A very short exposure or a few whiffs of the gas or vapor could cause death; or the gas, vapor, or liquid could be fatal if it penetrates protective clothing which is designed for resistance to heat. For most chemicals having a Health Hazard rating of 4, special chemical protective clothing must be worn to prevent exposures.

3 Materials extremely hazardous to health which could cause serious temporary or permanent injury even if prompt medical treatment is given. Materials giving off highly toxic combustion products if burned. Materials corrosive to living tissue or toxic by skin absorption.

2 Materials which could cause temporary collapse or possible permanent injury from intense or prolonged exposures. Materials which can cause irritation, without destruction of tissue, from skin contact.

1 Materials which will cause irritation or minor injury from exposures. Materials which give off irritating combustion products if burned. Materials only slightly hazardous to health.

0 Materials which offer no health hazard under fire conditions beyond that of ordinary combustible material.

The right-hand section is color coded yellow and contains a hazard rating from 0 to 4, indicating whether the material is unstable or highly reactive. The degrees of reactivity hazard are as follows:

4 Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. This includes materials which are sensitive to mechanical or localized thermal shock.

3 Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction, but which require a strong initiating source or which must be heated under confinement before they will react. This includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without heating or confinement.

2 Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This includes materials which can undergo chemical changes with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical changes at elevated temperatures and pressures. It also includes those materials which may react violently with water or which may form potentially explosive mixtures with water.

1 Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently.

0 Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

The bottom section of the diamond is white and is used primarily to identify unusual reactivity with water. A W with a line through its center alerts personnel to the possible hazard in contact with water. A radiation symbol may be used in this bottom section of the diamond to indicate a radiation exposure hazard. Oxidizing chemicals are identified in this space by the letters OXY. Corrosives are identified in this space by the letters COR.

II. NONCARCINOGENIC EFFECTS

The OSHA standard is based on minimizing risk of exposed workers dying of lung cancer from exposure to inorganic arsenic. It will also minimize skin cancer from such exposures.

The following three sections quoted from "Occupational Diseases: A Guide to Their Recognition", Revised Edition, June 1977, National Institute for Occupational Safety and Health is included to provide information on the nonneoplastic effects of exposure to inorganic arsenic. Such effects should not occur if the OSHA standards are followed.

A. Local - Trivalent arsenic compounds are corrosive to the skin. Brief contact has no effect but prolonged contact results in a local hyperemia and later vesicular or pustular eruption. The moist mucous membranes are most sensitive to the irritant action. Conjunctiva, moist and macerated areas of skin, the eyelids, the angles of the ears, nose, mouth, and respiratory mucosa are also vulnerable to the irritant effects. The wrists are common sites of dermatitis, as are the genitalia if personal hygiene is poor. Perforations of the nasal septum may occur. Arsenic trioxide and pentoxide are capable of producing skin sensitization and contact dermatitis. Arsenic is also capable of producing keratoses, especially of the palms and soles.

B. Systemic - The acute toxic effects of arsenic are generally seen following ingestion of inorganic arsenical compounds. This rarely occurs in an industrial setting. Symptoms develop within 1/2 to 4 hours following ingestion and are usually characterized by constriction of the throat followed by dysphagia, epigastric pain, vomiting, and watery diarrhea. Blood may appear in vomitus and stools. If the amount ingested is sufficiently high, shock may develop due to severe fluid loss, and death may ensue in 24 hours. If the acute effects are survived, exfoliative dermatitis and peripheral neuritis may develop.

Cases of acute arsenical poisoning due to inhalation are exceedingly rare in industry. When it does occur, respiratory tract symptoms-cough, chest pain, dyspnea-giddiness, headache, and extreme general weakness precede gastrointestinal symptoms. The acute toxic symptoms of trivalent arsenical poisoning are due to severe inflammation of the mucous membranes and greatly increased permeability of the blood capillaries.

Chronic arsenical poisoning due to ingestion is rare and generally confined to patients taking prescribed medications. However, it can be a concomitant of inhaled inorganic arsenic from swallowed sputum and improper eating habits. Symptoms are weight loss, nausea and diarrhea alternating with constipation, pigmentation and eruption of the skin, loss of hair, and peripheral neuritis. Chronic hepatitis and cirrhosis have been described. Polyneuritis may be the salient feature, but more frequently there are numbness and parasthenias of "glove and stocking" distribution. The skin lesions are usually melanotic and keratotic and may occasionally take the form of an intradermal cancer of the squamous cell type, but without infiltrative properties. Horizontal white lines (striations) on the fingernails and toenails are commonly seen in chronic arsenical poisoning and are considered to be a diagnostic accompaniment of arsenical polyneuritis.

Inhalation of inorganic arsenic compounds is the most common cause of chronic poisoning in

the industrial situation. This condition is divided into three phases based on signs and symptoms.

First Phase: The worker complains of weakness, loss of appetite, some nausea, occasional vomiting, a sense of heaviness in the stomach, and some diarrhea.

Second Phase: The worker complains of conjunctivitis, a catarrhal state of the mucous membranes of the nose, larynx, and respiratory passage. Coryza, hoarseness, and mild tracheobronchitis may occur. Perforation of the nasal septum is common, and is probably the most typical lesion of the upper respiratory tract in occupational exposure to arsenical dust. Skin lesions, eczematoid and allergic in type, are common.

Third Phase: The worker complains of symptoms of peripheral neuritis, initially of hands and feet, which is essentially sensory. In more severe cases, motor paralyses occur; the first muscles affected are usually the toe extensors and the peronei. In only the most severe cases will paralysis of flexor muscles of the feet or of the extensor muscles of hands occur.

Liver damage from chronic arsenical poisoning is still debated, and as yet the question is unanswered. In cases of chronic and acute arsenical poisoning, toxic effects to the myocardium have been reported based on EKG changes. These findings, however, are now largely discounted and the EKG changes are ascribed to electrolyte disturbances concomitant with arsenicalism. Inhalation of arsenic trioxide and other inorganic arsenical dusts does not give rise to radiological evidence or pneumoconiosis. Arsenic does have a depressant effect upon the bone marrow, with disturbances of both erythropoiesis and myelopoiesis.

§1910.1001 App G Substance technical information for asbestos - Non-Mandatory

Appendix G to 1910.1001 - Substance technical information for asbestos - Non-Mandatory

I. Substance Identification

A. Substance: "Asbestos" is the name of a class of magnesium-silicate minerals that occur in fibrous form. Minerals that are included in this group are chrysotile, crocidolite, amosite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos.

B. Asbestos is used in the manufacture of heat-resistant clothing, automative brake and clutch linings, and a variety of building materials including floor tiles, roofing felts, ceiling tiles, asbestos-cement pipe and sheet, and fire-resistant drywall. Asbestos is also present in pipe and boiler insulation materials, and in sprayed-on materials located on beams, in crawlspaces, and between walls.

C. The potential for a product containing asbestos to release breatheable fibers depends on its degree of friability. Friable means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable, and they readily release airborne fibers if disturbed. Materials such as vinyl-asbestos floor tile or roofing felts are considered nonfriable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut or sawed, or if they are broken during demolition operations.

D. Permissible exposure: Exposure to airborne asbestos fibers may not exceed 0.2 fibers per cubic centimeter of air (0.2 f/cc) averaged over the 8-hour workday.

II. Health Hazard Data

A. Asbestos can cause disabling respiratory disease and various types of cancers if the fibers are inhaled. Inhaling or ingesting fibers from contaminated clothing or skin can also result in these diseases. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

B. Exposure to asbestos has been shown to cause lung cancer, mesothelioma, and cancer of the stomach and colon. Mesothelioma is a rare cancer of the thin membrane lining of the chest and abdomen. Symptoms of mesothelioma include shortness of breath, pain in the walls of the chest, and/or abdominal pain.

III. Respirators and Protective Clothing

A. Respirators: You are required to wear a respirator when performing tasks that result in asbestos exposure that exceeds the permissible exposure limit (PEL) of 0.2 f/cc. These conditions can occur while your employer is in the process of installing engineering controls to reduce asbestos exposure, or where engineering controls are not feasible to reduce asbestos exposure. Air-purifying respirators equipped with a high-efficiency particulate air (HEPA) filter can be used where airborne asbestos fiber concentrations do not exceed 2 f/cc; otherwise, air-supplied, positive-pressure, full facepiece respirators must be used. Disposable respirators or dust masks are not permitted to be used for asbestos work. For effective protection, respirators must fit your face and head snugly. Your employer is required to conduct fit tests when you are first assigned a respirator and every 6 months thereafter. Respirators should not be loosened or removed in work situations where their use is required.

B. Protective Clothing: You are required to wear protective clothing in work areas where asbestos fiber concentrations exceed the permissible exposure limit (PEL) of 0.2 f/cc to prevent contamination of the skin. Where protective clothing is required, your employer must provide you with clean garments. Unless you are working on a large asbestos removal or demolition project, your employer must also provide a change room and separate lockers for your street clothes and contaminated work clothes. If you are working on a large asbestos removal or demolition project, and where it is feasible to do so, your employer must provide a clean room, shower, and decontamination room contiguous to the work area. When leaving the work area, you must remove contaminated clothing before proceeding to the shower. If the shower is not adjacent to the work area, you must vacuum your clothing before proceeding to the change room and shower. To prevent inhaling fibers in contaminated change rooms and showers, leave your respirator on until you leave the shower and enter the clean change room.

§1910.1001 App H Medical surveillance guidelines for asbesto - Non-Mandatory

Appendix H to 1910.1001 - Medical surveillance guidelines for asbesto - Non-Mandatory

I. Route of Entry Inhalation, Ingestion

II. Toxicology

Clinical evidence of the adverse effects associated with exposure to asbestos is present in the form of several well-conducted epidemiological studies of occupationally exposed workers, family contacts of workers, and persons living near asbestos mines. These studies have shown a definite association between exposure to asbestos and an increased incidence of lung cancer, pleural and peritoneal mesothelioma, gastrointestinal cancer, and asbestosis. The latter is a disabling fibrotic lung disease that is caused only by exposure to asbestos. Exposure to asbestos has also been associated with an increased incidence of esophageal, kidney, laryngeal, pharyngeal, and buccal

cavity cancers. As with other known chronic occupational diseases, disease associated with asbestos generally appears about 20 years following the first occurrence of exposure: There are no known acute effects associated with exposure to asbestos

Epidemiological studies indicate that the risk of lung cancer among exposed workers who smoke cigarettes is greatly increased over the risk of lung cancer among non-exposed smokers or exposed nonsmokers. These studies suggest that cessation of smoking will reduce the risk of lung cancer for a person exposed to asbestos but will not reduce it to the same level of risk as that existing for an exposed worker who has never smoked.

III. Signs and Symptoms of Exposure-Related Disease

The signs and symptoms of lung cancer or gastrointestinal cancer induced by exposure to asbestos are not unique, except that a chest X-ray of an exposed patient with lung cancer may show pleural plaques, pleural calcification, or pleural fibrosis. Symptoms characteristic of mesothelioma include shortness of breath, pain in the walls of the chest, or abdominal pain. Mesothelioma has a much longer latency period compared with lung cancer (40 years versus 15-20 years), and mesothelioma is therefore more likely to be found among workers who were first exposed to asbestos at an early age. Mesothelioma is always fatal.

Asbestosis is pulmonary fibrosis caused by the accumulation of asbestos fibers in the lungs. Symptoms include shortness of breath, coughing, fatigue, and vague feelings of sickness. When the fibrosis worsens, shortness of breath occurs even at rest. The diagnosis of asbestosis is based on a history of exposure to asbestos, the presence of characteristic radiologic changes, end-inspiratory crackles (rales), and other clinical features of fibrosing lung disease. Pleural plaques and thickening are observed on X-rays taken during the early stages of the disease. Asbestosis is often a progressive disease even in the absence of continued exposure, although this appears to be a highly individualized characteristic. In severe cases, death may be caused by respiratory or cardiac failure.

IV. Surveillance and Preventive Considerations

As noted above, exposure to asbestos has been linked to an increased risk of lung cancer, mesothelioma, gastrointestinal cancer, and asbestosis among occupationally exposed workers. Adequate screening tests to determine an employee's potential for developing serious chronic diseases, such as cancer, from exposure to asbestos do not presently exist. However, some tests, particularly chest X-rays and pulmonary function tests, may indicate that an employee has been overexposed to asbestos increasing his or her risk of developing exposure-related chronic diseases. It is important for the physician to become familiar with the operating conditions in which occupational exposure to asbestos is likely to occur. This is particularly important in evaluating medical and work histories and in conducting physical examinations. When an active employee has been identified as having been overexposed to asbestos measures taken by the employer to eliminate or mitigate further exposure should also lower the risk of serious long-term consequences.

Appendix A to § XXX-Substance Safety Data Sheet

Cadmium

I. Substance Identification

[57 FR 42452, Sept 14, 1992]

A. Substance: Cadmium.

B. 8-Hour, Time-weighted-average, Permissible Exposure Limit (TWA PEL):

1. TWA PEL: Five micrograms of cadmium per cubic meter of air 5 mg/m3, time-weighted average (TWA) for an 8-hour workday.

C. Appearance: Cadmium metal-soft, blue-white, malleable, lustrous metal or grayish-white powder. Some cadmium compounds may also appear as a brown, yellow, or red powdery substance.

II. Health Hazard Data

A. Routes of Exposure. Cadmium can cause local skin or eye irritation. Cadmium can affect your health if you inhale it or if you swallow it.

B. Effects of Overexposure.

1. Short-term (acute) exposure: Cadmium is much more dangerous by inhalation than by ingestion. High exposures to cadmium that may be immediately dangerous to life or health occur in jobs where workers handle large quantities of cadmium dust or fume; heat cadmium-containing compounds or cadmium-coated surfaces; weld with cadmium solders or cut cadmium-containing materials such as bolts.

2. Severe exposure may occur before symptoms appear. Early symptoms may include mild irritation of the upper respiratory tract, a sensation of constriction of the throat, a metallic taste and/or a cough. A period of 1-10 hours may precede the onset of rapidly progressing shortness of breath, chest pain, and flu-like symptoms with weakness, fever, headache, chills, sweating and muscular pain. Acute pulmonary edema usually develops within 24 hours and reaches a maximum by three days. If death from asphyxia does not occur, symptoms may resolve within a week.

3. Long-term (chronic) exposure. Repeated or long-term exposure to cadmium, even at relatively low concentrations, may result in kidney damage and an increased risk of cancer of the lung and of the prostate.

C. Emergency First Aid Procedures.

1. Eye exposure: Direct contact may cause redness or pain. Wash eyes

immediately with large amounts of water, lifting the upper and lower eyelids. Get medical attention immediately.

2. Skin exposure: Direct contact may result in irritation. Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water. Get medical attention immediately.

3. Ingestion: Ingestion may result in vomiting, abdominal pain, nausea, diarrhea, headache and sore throat. Treatment for symptoms must be administered by medical personnel. Under no circumstances should the employer allow any person whom he retains, employs, supervises or controls to engage in therapeutic chelation. Such treatment is likely to translocate cadmium from pulmonary or other tissue to renal tissue. Get medical attention immediately.

4. Inhalation: If large amounts of cadmium are inhaled, the exposed person must be moved to fresh air at once. If breathing has stopped, perform cardiopulmonary resuscitation. Administer oxygen if available. Keep the affected person warm and at rest. Get medical attention immediately.

5. Rescue: Move the affected person from the hazardous exposure. If the exposed person has been overcome, attempt rescue only after notifying at least one other person of the emergency and putting into effect established emergency procedures. Do not become a casualty yourself. Understand your emergency rescue procedures and know the location of the emergency equipment before the need arises.

III. Employee Information

A. Protective Clothing and Equipment.

1. Respirators: You may be required to wear a respirator for non-routine activities; in emergencies; while your employer is in the process of reducing cadmium exposures through engineering controls; and where engineering controls are not feasible. If respirators are worn in the future, they must have a joint Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) label of approval. Cadmium does not have a detectable odor except at levels well above the permissible exposure limits. If you can smell cadmium while wearing a respirator, proceed immediately to fresh air. If you experience difficulty breathing while wearing a respirator, tell your employer.

2. Protective Clothing: You may be required to wear impermeable clothing, gloves, foot gear, a face shield, or other appropriate protective clothing to prevent skin contact with cadmium. Where protective clothing is required, your employer must provide clean garments to you as necessary to assure that the clothing protects you adequately. The employer must replace or repair protective clothing that has become torn or otherwise damaged.

3. Eye Protection: You may be required to wear splash-proof or dust resistant goggles to prevent eye contact with cadmium.

B. Employer Requirements.

1. Medical: If you are exposed to cadmium at or above the action level, your employer is required to provide a medical examination, laboratory tests and a medical history according to the medical surveillance provisions under paragraph (1) of this standard. (See summary chart and tables in this appendix A.) These tests shall be provided without cost to you. In addition, if you are accidentally exposed to cadmium under conditions known or suspected to constitute toxic exposure to cadmium, your employer is required to make special tests available to you.

2. Access to Records: All medical records are kept strictly confidential. You or your representative are entitled to see the records of measurements of your exposure to cadmium. Your medical examination records can be furnished to your personal physician or designated representative upon request by you to your employer.

3. Observation of Monitoring: Your employer is required to perform measurements that are representative of your exposure to cadmium and you or your designated representative are entitled to observe the monitoring procedure. You are entitled to observe the steps taken in the measurement procedure, and to record the results obtained. When the monitoring procedure is taking place in an area where respirators or personal protective clothing and equipment are required to be worn, you or your representative must also be provided with, and must wear the protective clothing and equipment.

C. Employee Requirements.-You will not be able to smoke, eat, drink, chew gum or tobacco, or apply cosmetics while working with cadmium in regulated areas. You will also not be able to carry or store tobacco products, gum, food, drinks or cosmetics in regulated areas because these products easily become contaminated with cadmium from the workplace and can therefore create another source unnecessary of cadmium exposure.

Some workers will have to change out of work clothes and shower at the end of the day, as part of their workday, in order to wash cadmium from skin and hair. Handwashing and cadmium-free eating facilities shall be provided by the employer and proper hygiene should always be performed before eating. It is also recommended that you do not smoke or use tobacco products, because among other things, they naturally contain cadmium. For further information, read the labeling on such products.

APPENDIX A to 1910.1025 - SUBSTANCE DATA SHEET FOR OCCUPATIONAL EXPOSURE TO LEAD

I. SUBSTANCE IDENTIFICATION

A. Substance: Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

B. Compounds Covered by the Standard: The word "lead" when used in this standard means elemental lead, all inorganic lead compounds and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

C. Uses: Exposure to lead occurs in at least 120 different occupations, including primary and secondary lead smelting, lead storage battery manufacturing, lead pigment manufacturing and use, solder manufacturing and use, shipbuilding and ship repairing, auto manufacturing, and printing.

D. Permissible Exposure: The Permissible Exposure Limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air (50 ug/m(3)), averaged over an 8-hour workday.

E. Action Level: The standard establishes an action level of 30 micrograms per cubic meter of air (30 ug/m(3)), time weighted average, based on an 8-hour work-day. The action level initiates several requirements of the standard, such as exposure monitoring, medical surveillance, and training and education.

II. HEALTH HAZARD DATA

A. Ways in which lead enters your body. When absorbed into your body in certain doses lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed.

Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume or mist it can be inhaled and absorbed through you lungs and upper respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them

with hands contaminated with lead, this will contribute to ingestion.

A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream, lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

B. Effects of overexposure to lead

(1) Short term (acute) overexposure. Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(2) Long-term (chronic) overexposure. Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain.

Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, restlessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy.

Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible.

Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood.

Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(3) Health protection goals of the standard. Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that worker blood lead (PbB) levels be maintained at or below forty micrograms per one hundred grams of whole blood (40 ug/100g). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 ug/100g to minimize adverse reproductive health effects to the parents and to the developing fetus.

The measurement of your blood lead level is the most useful indicator of the amount of lead being absorbed by your body. Blood lead levels (PbB) are most often reported in units of milligrams (mg) or micrograms (ug) of lead (1 mg=1000 ug) per 100 grams (100g), 100 milliliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometime PbB's are expressed in the form of mg% or ug%. This is a shorthand notation for 100g, 100 ml, or dl.

PbB measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. PbB measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between PbBs and various diseases. As a result, your PbB is an important indicator of the likelihood that you will gradually acquire a lead-related health impairment or disease.

Once your blood lead level climbs above 40 ug/100g, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular PbB in a given person will cause a particular effect. Studies have associated fatal encephalopathy with PbBs as low as 150 ug/100g. Other studies have shown other forms of diseases in some workers with PbBs well below 80 ug/100g. Your PbB is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated PbBs. The longer you have an elevated PbB, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage.

The best way to prevent all forms of lead-related impairments and diseases-both short term and long term- is to maintain your PbB below 40 ug/100g. The provisions of the standard are designed with this end in mind. Your employer has prime responsibility to assure that the provisions of the standard are complied with both by the company and by individual workers. You as a worker, however, also have a responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own actions, and seeing that your employer complies with provisions governing his actions.

(4) Reporting signs and symptoms of health problems. You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead on your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place.

The standard contains a procedure whereby you can obtain a second opinion by a physician of your choice if the employer selected the initial physician. This procedure, however, was delayed by the Court of Appeals in March of 1979, and will not go into effect until after the Court's decision on the overall validity of the standard.

APPENDIX G

HEALTH & SAFETY
RULES & SAFE WORK PRACTICES

APPENDIX G

EMPLOYEE HEALTH AND SAFETY RULES

GENERAL SAFETY RULES

1. Immediately report unsafe acts, conditions: or equipment to your supervisor or Health and Safety Representative.

2. Immediately report all accidents resulting in property damage, injury or illness to your supervisor.

3. "Horseplay" and "roughhousing" is not permitted on company property.

4. Each employee is responsible for issued safety equipment. Report loss or damage immediately.

5. Safety glasses/goggles and hard hats (where applicable) will be provided to all "visitors."

6. Smoking is prohibited except in designated areas.

ALCOHOL AND DRUGS

1. The possession, use, consumption, sale, purchase, or transfer of any illegal and unauthorized drugs, controlled substances, and alcoholic beverages is not permitted on RRS properties or vehicles and is cause for immediate termination.

2. All employees must conform to RRS' Alcohol & Drug-Free workplace requirements.

COMPRESSED AIR

1. Never point an air hose at anyone.

2. Never use compressed air to clean clothing or equipment.

3. Never use compressed air to empty flammable liquid drums.

4. Do not remove pressure reducing devices.

COMPRESSED GASES

1. Cylinders must have a printed tag, label or other identification that specifies the contents. Do not accept cylinders without such identification. Do not destroy identification tags or labels.

2. Cylinder valves must be protected. Do not accept cylinders unless they are provided with cylinder valve protective caps. The caps must remain on cylinders when not in use.

3. Reject cylinders if any of these conditions are observed: large dents, leaks, severe corrosion, cuts or gouges.

4. Cylinders should be transported only on a portable truck, rack, or cart made for that purpose and secured so they cannot fall.

5. Do not drop cylinders or permit them to strike each other.

6. Chain or strap cylinders to a rack, bench, cart, or building column so they cannot fall over.

7. Never place any compressed gas cylinder in a place where it may be exposed to an electrical short circuit.

8. Empty Cylinder Handling - Close valve, replace cylinder valve protective cap and mark cylinder with chalk or tag: "**EMPTY**" or "**MT**".

9. Discharge Controls - Some cylinders may have unique threads or sizes of valves and fittings depending on the gas. Do not attempt to interchange. Automatic pressure regulators shall not be by-passed.

10. Leaking Cylinders and Fittings - If leaks are detected, the cylinder main control valve should be closed. Report the leak to your supervisor or Health and Safety.

11. Use the proper regulators, valves, and hoses on all compressed gas cylinders. Isolate cylinders, hoses and other equipment, keeping them adjacent to the work area, to prevent damage by other personnel, vehicles, etc.

12. Never withdraw acetylene at greater than 15 psi.

13. Never lay any cylinder on its side.

14. Never use copper tubing or fittings on flammable gas cylinders.

15. Do not wear oily or dirty gloves when handling or using compressed gas cylinders and equipment.

16. Segregate full and empty cylinders and store according to compatibility.

CONFINED SPACES

1. Any confined space entry must by authorized by an approved permit.

2. Entry into a confined space is prohibited if flammable gases exceed 10% of the lower explosive limit (LEL) or oxygen concentration is less than 19.5% or exceeds 23.5%.

3. Entry into a confined space containing toxic contaminants shall be permitted only after proper monitoring has been conducted and the appropriate PPE selected.

4. Anyone entering a confined space must be properly trained and follow RRS' Confined Space Entry procedure. Failure to do so may result in immediate termination.

CRANES AND MANLIFTS

1. Only qualified personnel shall operate cranes and manlifts.

2. Extend outriggers on a firm level surface positioned close to the work or place pads under outriggers for reinforcement.

3. Stay within limits for extension and weight.

4. Operations adjacent to overhead power lines are prohibited unless one of the following conditions are satisfied.

   A. Power line has been shut off and positive means taken to prevent lines from being energized.

   B. If the power line(s) are energized, Health and Safety must be contacted for further instruction.

5. Operate controls smoothly and maintain uninterrupted observation in the direction of travel.

6. Do not allow anyone to stand or walk under the load.

7. Manlifts will not be utilized without prior approval from Health and Safety.

ELECTRICAL

1. Only qualified personnel shall make electrical repairs or installations.

2. Consider all wires "live" until locked and tagged out. Keep a safe distance from "live" electricity.

3. Have electrical equipment properly grounded. Use only three-wire grounded receptacles and extension cords. Use Ground Fault Circuit Interrupter (GFCI) outlets or circuit breakers on all 110V outside, wet locations, or portable (5 KW or greater) power sources. Test GFCI before operation.

4. Do not use electrical power tools or equipment while standing in water. Keep cords out of wet areas.

5. Cord splices or repairs shall be electrically and mechanically equal to that cord's quality. No substandard patching is permitted.

6. Use explosion-proof fixtures and connections while working in confined spaces where flammable vapors could be present.

7. Inspect electrical grounding to prevent shock in case tool insulation breaks.

8. Inspect cord-supplied equipment for any ground problems before using.

9. Report suspect damaged equipment to you supervisor. Do not use until repaired and tested.

FALL PROTECTION

1. Use safety harness and safety line if rail protection or other fall protection is not available for heights of 4 feet or more.

2. Avoid shortcuts. Use ramps, stairs, walkways, or ladders.

3. Be sure of your footing. Watch out for overhanging or broken planks, slipper spots, loose objects, etc.

4. Do not block aisles or access to work areas. Maintain enough light on stairs, aisles, and work area to prevent falls.

5. Do not leave floor opening unprotected. Use strong cover, or 42-inch-high guardrail with midrail and toeboard.

6. Store cords, leads, hoses, etc. properly to avoid damage.

7. Spills and leaks are to be cleaned up immediately.

FIRE PROTECTION

1. Obey **"NO SMOKING"** signs.

2. Smoking is prohibited, except in designated areas.

3. Label clearly and store flammable liquid containers in a protected, ventilated, and approved area.

4. Use flammable liquids only in small amounts and in approved, self-closing containers.

5. Do not refuel a running vehicle or engine. Clean up spills before starting. Extreme caution must be taken when fueling vehicles or engines with hot surfaces.

6. Never use gasoline or any flammable liquid as a cleaner.

7. Store oily rags in approved self-closing metal containers and dispose of them properly.

8. Bond and ground all flammable liquid containers and transfer equipment when transferring or filling product.

9. Use only explosion proof electrical equipment in potentially flammable vapor areas.

10. Only approved fire extinguisher will be used. Do not obstruct fire extinguisher from direct view or access.

11. Keep portable heating equipment away from combustible materials.

12. Make sure engines are away from combustibles and exhaust is properly ventilated.

HAZARD COMMUNICATION

1. All employees have a right to know the properties of hazardous materials to which they may be exposed.

2. All employees will be informed of hazards of materials to which they are exposed through training and information provided by RRS.

3. Material Safety Data Sheets (MSDS) are available on hazardous materials used at each RRS project site.

4. All hazardous material containers obtained from outside suppliers shall identify the hazardous contents and appropriate hazard warning.

HEAD, FOOT, AND EYE PROTECTION

1. Hard hats and eye protection must be worn by employees and visitors in all areas where such requirements are indicated.

2. Wear safety glasses in designated areas or if the potential for an eye injury exists.

3. Splash goggles and/or face shield must be worn when there is a possibility of any injury from chemicals, dusts, chips, sparks or hot splashing metal.

4. Approved steel-toed, chemical resistant safety footwear must be worn in designated areas or where mechanical and/or chemical protection is necessary.

HEAT STRESS

1. Avoid prolonged exposure in hot environments by taking proper precautions. If you work in hot environments, make sure you do the following:

   a. Drink plenty of liquids. Do not drink alcoholic beverages.

   b. Take adequate rest periods in a cool, shaded environment.

   c. Remove personal protective equipment during rest periods.

COLD STRESS

1. Avoid prolonged exposure in cold environments by taking proper precautions. If you work in cold environments, make sure you do the following:

   a. Wear adequate clothing to protect against cold exposure.

   b. Several thin layers of clothing with an outer wind barrier provides better protection as opposed to one thick layer.

   c. Avoid use of damp or wet clothing.

   d. Immediately remove any person from a cold environment who is suspected of suffering from hypothermia.

e. Do not rub any part of the body which may be frost bitten.

HOUSEKEEPING

1. Keep work site clean and orderly.

2. Shavings, dust, scraps, rags, oil or grease must not accumulate. Make good housekeeping part of the job. Remove tools and trash at the end of each job completion.

3. Keep loose materials off stairs, walkways, ramps, platforms, etc.

4. Do not block aisles, traffic lanes, fire exits or electrical panels and access to all emergency equipment such as eye washes, deluge showers, fire blankets, fire extinguisher, first aid supplies, emergency communication devices, etc.

LADDERS AND SCAFFOLDS

1. Inspect ladders before each use and do not use if damaged. Do not use painted wooden ladders.

2. When ascending or descending, the climber must face the ladder using both hands. Use hand line or material hoist to lift loads. Do not lift electrical tools by their cords.

3. Use only sturdy ladders on firm base. Angle base 1/4 of ladder working length. Keep area clear of scrap, tools, hose, etc.

4. Have ladder reach at least three feet above landing for easy access. Tie off ladder at top. Secure bottom and brace long ladders.

5. Avoid using metal ladders in areas containing electric circuits to prevent short circuits or electric shock.

6. All scaffolds and their supports shall be capable of supporting the load they are designed to carry with a safety factor of at least 4.

7. All planking shall be of a scaffold grade, as recognized by grading rules for the species of wood used.

8. Platform planks should overlap supports not less than six inches nor more than 18 inches, and be secured from shifting.

9. Railings and toeboards shall be installed on all open sides and ends of platforms more than 4 feet above the floor.

10. Keep all tools and material away from edge of scaffold, platforms, shaft openings, etc.

LIFTING

1. Always size up the load first. Get help with heavy or bulky materials to avoid dropping the load or getting thrown off balance, or injuring your back.

2. Bend knees, keep back nearly straight when lifting. Leg muscles, not your back, should do the work. Do not twist.

3. Have just one person give commands when team lifting oversized loads. Before you lift, check for clear path. Then have clear view while carrying the load.

MACHINES AND MACHINE GUARDING

1. Before starting machinery, opening valves, switches, etc., check safety of workmen. Have safety guards in place.

2. Never adjust or repair machinery while in motion. Lock out, block and/or bleed air as required to prevent any possible movement.

3. Operate machinery and vehicles within rated capacity and at safe speeds.

4. Report defective power tools or machinery to supervisor immediately.

5. Never alter or remove safety devices; such as guards, alarms, etc. from machinery.

NOISE

1. Prolonged exposure to excessive noise (above 85 decibels) without hearing protection can impair your hearing. Refer to the RRS Hearing Conversation procedure for specific requirements.

2. Wear approved hearing protection in areas designated "Hearing Protection Required" (such as hydroblasting).

OVERHEAD LOADS

1. Be aware of work going on around you. Keep clear of suspended loads, traffic areas, etc.

2. Place barricades and signs to warn of overhead danger, traffic, excavation, etc. Have warning lights, flagman, or watchman if necessary.

3. Keep check on loads, lines, slings, blocks, clamps, or other tackle. Repair/replace defects. Hang up slings if not in use. Always check for sling capacity.

RESPIRATORY PROTECTION

1. Wear an approved respirator when working with hazardous materials or as directed by Health & Safety. Reference Rust's Respiratory Protection procedure.

2. Do not ride or drive any vehicle or mobile equipment unless authorized. All occupants shall wear seat belts provided.

3. Keep unloaded forks in the down position when not loaded. Always travel with the load upgrade when ascending or descending grades in excess of 10 percent.

4. Perform vehicle pre-trip inspection complete inspections report as required. Safety discrepancies must be correct before using vehicle.

5. Use a spotter when backing vehicles whenever possible. Check the area for obstructions for obstructions if a spotter is not available.

6. All power units must be equipped with a fire extinguisher that is properly filled and readily accessible.

7. Do not ride on the forks of lift truck or on a load, rigging, hook or ball, or pickup bed.

8. Check operation of back up alarm. Do not alter or remove safety equipment such as alarms, fire extinguisher, etc. from vehicles.

9. Observe all federal, state, local and facility project speed limits.

WELDING AND CUTTING

1. Welding, cutting and torching operation require a **Hot work Permit**.

2. Welding and cutting work shall be closely supervised. Remove or shield nearby combustibles.

3. Keep a fire watch with adequate fire extinguisher during and after "hot work" as job location requires.

4. Do not look at welding or cutting operations without wearing proper eye protection.

5. Check hose, fitting, valves for leaks using soapy water. Cylinders shall be kept upright and secured.

6. Transport or move cylinders only with caps securely in place.

7. Keep oily cloths away from oxygen.

8. Always light torch with a "torch lighter", never use a match or cigarette. Never light in a keg or drum.

9. Open cylinder valves slowly to prevent damage to regulator. Never use a damaged regulator.

10. Do not wear oil-soaked or other contaminated clothing. Check clothing after work for hidden hot slag or molten metal.

11. Wear approved clothing and personal protective equipment for welding.

12. Bleed lines and shut off cylinders after each use.

13. Do not place torch unattended in manways of vessels or tanks.

14. Do not leave welding unit on unattended.

JEWELRY, ORNAMENTS, LOOSE CLOTHING

1. Safe work practices shall be maintained and followed by employees, contractors and visitors while on RRS project sites.

2. Jewelry or ornaments, i.e., rings, watches, bracelets, neck chain, and earrings shall not be worn while working with moving machines, power tools, and/or equipment where the possibility exists for entrapment of the jewelry or ornaments in the machines, power tools and/or equipment.

3. Long, loose hair or "pony tails" will be secured and covered at all process work locations and other works areas where the possibility exists for hair to become caught in machines, power tools and/or equipment or be contaminated with chemicals.

4. Loose clothing and attire; i.e., shirt tails, sleeves, neck ties, scarves, etc., shall be secured to prevent entrapment in moving machines, power tools and/or equipment.

1.0 PURPOSE

To provide a code of conduct which will allow for a smooth operation of the job site with as little time loss as possible due to violation of safety rules and regulations.

2.0 SCOPE

This standard applies to all Company operating units.

3.0 GENERAL REQUIREMENTS

A copy of the Company Safety Rules and Regulations must be posted at all job sites, in such a manner and location that they can be readily available to all employees of the project.

Compliance with the Safety Rules and Regulations is considered a condition of employment. Disciplinary action may be taken for violations of these Safety Rules and Regulations.

A copy of the Safety Rules and Regulations will be made available to any employee or employee representative requesting a personal copy.

EXHIBIT 1

COMPANY SAFETY RULES AND REGULATIONS

THE FOLLOWING MUST BE STRICTLY ADHERED TO BY ALL PERSONNEL WHILE ON COMPANY JOB SITES AND COMPANY PROPERTY!

- Employees must be in "working" clothes and ready for work at the designated starting time.
- Employees may take lunch breaks only during designated times and must eat, smoke or drink in the area assigned.
- All personnel are required to comply with Company's Alcohol and Drug Free Workplace Policy as a condition of employment. Violation of any portion of this Policy may be cause for disciplinary action.
- Personnel shall comply with both verbal and written instructions from a supervisor or foreman.
- While on the job site, personnel shall comply with all OSHA Safety and Health Standards and with each of the safety procedures required by the Company safety program.
- All personal work injuries shall be reported immediately to a supervisor.
- All unsafe conditions shall be reported immediately to a supervisor.
- Hard hats must be worn by all personnel while on the job site.
- Employees shall use their personal protective equipment as required by law, and company procedures.
- If sampling equipment has been attached to an individual, it shall not be tampered with.
- Good housekeeping is mandatory.
- Employees will not engage in horseplay, practical jokes, or mischief while on the job site or Company property.
- Fighting or attempting bodily injury to another employee or Company visitor is not permitted.
- Unauthorized use of, tampering or willful or wanton neglect in the care and/or use of Company property shall not be permitted.
- The possession of unauthorized weapons is expressly forbidden.
- Falsifying Company records and/or reports will not be tolerated.

APPENDIX H

HEALTH & SAFETY TRAINING REQUIREMENTS

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS (1 of 3)

JOB TITLE OR POSITION DESCRIPTION	HEALTH AND SAFETY TRAINING - GENERAL REQUIREMENTS						FIRST AID AND CPR		CONFINED SPACE ENTRY		LAB SAFETY
	HAZWOPER NEW HIRE TRAINING (24 HRS)	HAZWOPER NEW HIRE TRAINING (40 HRS)	HAZWOPER (ON THE JOB SUPERVISION) (24 HRS)	HAZWOPER SUPERVISOR TRAINING (8 HRS)	HAZWOPER ANNUAL REFRESHER (8 HRS)	HEALTH AND SAFETY FOR ADMIN OPERATIONS (4 HRS)	FIRST AID 4-HOUR (BIANNUAL)	ADULT CPR 4-HOUR (ANNUAL)	COMPETENT WORKER (8 HOURS)	QUALIFIED SUPERVISOR (24 HRS)	CHEMICAL HYGIENE PLAN (2 HRS)
ADMINISTRATIVE ASSISTANT/CLERICAL	M (9)					M	R	R			
COORDINATOR/ ACCOUNTANT	M (9)					M	R	R			
ADMINISTRATOR/ TECHNICAL WRITER	M (9)					M	R	R			
SUPERVISOR	M (9)			R (6)		M	R (2)	R (2)			
MANAGER	M (9)			R (6)		M	R (2)	R (2)			
REGIONAL MANAGEMENT	M (9)			R (6)	M						
OPERATIONS											
ENGINEER	M (1)		M	R	M		O	O			
ENVIRONMENTAL		M	M	R	M		R	R		R	O
ESTIMATOR	M (1)			O	M		R	R			
EQUIPMENT OPERATOR		M	M	R	M		M	M	R (4)		
FIELD TECHNICIAN		M	M	R	M		M	M	R (4)		
HEALTH & SAFETY		M	M	M	M	M	M	M	M	M	M
LAB PERSONNEL	M (1)		M	M (6)	M		R	R			M
PROJECT SUPERINTENDENT		M	M	M	M		M (3)	M (3)		R (5)	M (6)
PROJECT & OPS MANAGER		M	M	M	M		M (3)	M (3)		R (5)	M (6)
BUSINESS DEVELOPMENT MANAGER	M (1)			R	M		O	O			
QC/SURVEYOR/ GEOLOGIST		M	M	O	M		R	R		R (5)	
PROJECT COORDINATOR		M	M	M	M		M	M	M	R (5)	
SITE SAFETY OFFICER (SSO)		M	M	M	M		M	M		M	M (6)
SITE ENVIRONMENTAL OFFICER (SEO)		M	M	M	M		R	R		R (5)	
INDUSTRIAL HYGIENE TECHNICIAN (IHT)		M	M	R	M		M	M	M		

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS (2 OF 3)

JOB TITLE OR POSITION DESCRIPTION	SAFETY TRAINING OBSERVATION PROGRAM		SPECIAL EMPHASIS TRAINING				ENVIRONMENTAL TRAINING		
	STOP FOR EMPLOYEES (8 HRS)	STOP FOR SUPERVISORS (16 HRS)	FORK LIFT DRIVER TRAINING (8 HRS)	SITE SAFETY OFFICER TRAINING (40 HRS)	EXCAVATION SAFETY: COMPETENT PERSON TRAINING (8 HRS MIN)	INDUSTRIAL HYGIENE TECHNICIAN TRAINING (24 HRS)	SITE ENVIRONMENTAL OFFICER TRAINING (8 HRS MIN)	ENVIRONMENTAL AWARENESS TRAINING (4 HOURS)	HM-181 TRAINING
ADMINISTRATIVE ASSISTANT/CLERICAL	M							M	
COORDINATOR/ ACCOUNTANT	M							M	
ADMINISTRATOR/ TECHNICAL WRITER	M							M	
SUPERVISOR		M						M	
MANAGER		M						M	
REGIONAL MANAGEMENT		R					R	M	
OPERATIONS									
ENGINEER		M			M		R (10)	M	
ENVIRONMENTAL		M		R		R	M	M	
ESTIMATOR		R		O	R	O		M	
EQUIPMENT OPERATOR	M		M	O (7)	R (7)	O (11)	O (10)	M	
FIELD TECHNICIAN	M		R (8)	O (7)	R (7)	O (11)	O (10)	M	
HEALTH & SAFETY		M	R	M	M	M	M	M	
LAB PERSONNEL	M			R (7)		R (11)		M	
PROJECT SUPERINTENDENT		M		R (7)	R (6)	R (11)	M	M	
PROJECT & OPS MANAGER		M		R (7)	R (6)	R (11)	M	M	
BUSINESS DEVELOPMENT MANAGER		R						M	
QC/SURVEYOR/ GEOLOGIST	M			O	M	O		M	
PROJECT COORDINATOR		M		R (7)	R (7)	R (11)	M	M	
SITE SAFETY OFFICER (SSO)		M	R	M	M	M	M	M	
SITE ENVIRONMENTAL OFFICER (SEO)		M		R (7)	R (7)	R (11)	M	M	
INDUSTRIAL HYGIENE TECHNICIAN (IHT)	M			R (7)	R (7)	M	R (10)	M	

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS FOOTNOTES (3 OF 3)

M: MANDATORY - REQUIRED BY COMPANY POLICY, H & S REGULATIONS, OR BOTH.

R: RECOMMENDED - PARTICIPATION SUGGESTED WHEN TRAINING WILL PROVIDE USEFUL INFORMATION, ENHANCED UNDERSTANDING OF WORK REQUIREMENTS, OR PREREQUISITE FOR JOB ENHANCEMENT.

O: OPTIONAL - PARTICIPATION ENCOURAGED IF TRAINING IS RELEVANT TO POSITION ASSIGNMENT AND WILL CONTRIBUTE TO IMPROVED JOB UNDERSTANDING.

BLANK: NOT APPLICABLE

(1) 40 HOUR TRAINING MAY BE REQUIRED BY PERMIT CONDITIONS OR CONTRACT REQUIREMENTS AT CERTAIN PROJECT LOCATIONS.

(2) IT IS MANDATORY THAT AT LEAST ONE EMPLOYEE AT EACH OFFICE FACILITY OR SITE BE TRAINED IN FIRST AID AND CPR.

(3) IT IS MANDATORY THAT PROJECT MANAGERS MAINTAIN FIRST AID AND CPR CERTIFICATION IN ADDITION TO OTHER SITE EMPLOYEES.

(4) THIS TRAINING IS MANDATORY IF ENTRY INTO CONFINED SPACES IS REQUIRED.

(5) THIS TRAINING IS MANDATORY IF SUPERVISION AND PERMIT APPROVAL OF CONFINED SPACE ENTRY WORK IS REQUIRED.

(6) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WITH DIRECT EMPLOYEE SUPERVISORY RESPONSIBILITY IN THIS AREA.

(7) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WHICH SHARE RESPONSIBILITY AS SITE SAFETY OFFICER.

(8) THIS TRAINING IS MANDATORY FOR ANYONE RESPONSIBLE FOR THE OPERATIONS AND USE OF FORK LIFT TRUCKS.

(9) PERSONNEL ON ACTIVE PROJECT SITES OR REQUIRED TO ENTER ACTIVE PROJECT AREAS MAY REQUIRE A MINIMUM OF 24 HOURS OF TRAINING.

(10) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WHICH SHARE RESPONSIBILITY AS SEO.

(11) THIS TRAINING IS MANDATORY FOR THOSE PERSONNEL WHO SHARE RESPONSIBILITY AS SITE SAFETY OFFICER, SITE INDUSTRIAL HYGIENE TECHNICIAN, OR BOTH.

APPENDIX I

DISCIPLINARY PROCEDURES

RUST REMEDIAL SERVICES INC.

DIRECTIVE NUMBER: PD-313
ISSUE DATE: January 1, 1993
REVISION DATE: January 1, 1993

TITLE: PROGRESSIVE DISCIPLINE

RUST Remedial Services Inc. will discourage employee misconduct and control poor performance through progressive disciplinary steps. Documented progressive discipline where required will be uniformly applied to all employees to better achieve effectiveness and nondiscrimination.

The above notwithstanding, serious or gross misconduct, will result in an immediate investigation and application of appropriate penalties, including (without limitation) termination. See Exhibits II and III for examples of serious and gross misconduct.

PROCEDURE:

1. The progressive discipline steps detailed below apply to employee negligence, misconduct, poor performance and work rule infractions and shall serve as a model for handling disciplinary situations. See Exhibit I for examples of actions that may receive the progressive discipline steps set forth in this statement.

   (a) State 1 (Warning)

   The supervisor or manager will prepare a written warning letter summarizing the behavior being addressed, including a definition of the expected behavior modification. The supervisor or manager will review the warning letter with the assigned Human Resources Representative prior to any discussion with the employee. The supervisor or manager will discuss the employee's behavior with the employee in private and as free from interruptions as possible. All aspects of the behavior will be covered. The employee shall be told the area(s) in which behavior modification is expected and will establish a timeframe for accomplishment. It must be made clear to the employee that without improvement, more severe action will be necessary. The supervisor or manager will enumerate clearly and in writing the assistance, if any, to be provided to the employee. The employee shall be asked to verbally summarize his or her understanding of the matter and to sign the written summary. If the employee refuses to sign, it shall be so noted on the form and witnessed by a superior of the supervisor or manager. The supervisor or manager will provide a copy of the written warning to the employee and will forward the original to the assigned Human Resources Representative to be placed in the employee's personnel file.

   (b) State 2 (Final Warning)

   If the employee's behavior has not improved within the time limits established in Stage 1, the supervisor or manager will confer with the assigned Human Resources Representative regarding the nature of the behavior and proposed disciplinary action. The supervisor or manager will meet with the employee, in private and as free from interruptions as possible, a second time. The supervisor or manager will inform the employee of exact disciplinary actions to be implemented if the requested behavior modifications are not achieved by a date also indicated. These disciplinary actions may include, but are not necessarily limited to, termination of employment, suspension without pay, reduction in pay, or reduction in pay grade. A final written warning letter summarizing the behavior problem and the events of this meeting will be prepared by the supervisor or manager. The employee may enter comments on the same document if he or she so desires. The supervisor or manager will request the employee to sign the document. If the employee refuses to sign the document, the supervisor or manager will so note on the document and have it witnessed by a superior. The supervisor or manager will provide a copy of the final written warning to the employee and will forward the original to the assigned Human Resources Representative to be placed in the employee's personnel file.

(c) If there is no improvement within the prescribed time frame, the disciplinary actions set forth in Stage 2 are carried out by the supervisor or manager. The supervisor or manager shall summarize the behavior, disciplines and events of this procedure in writing and forward a copy of this document to the assigned Human Resources Representative prior to any discussion with the employee. A copy of this document shall be placed in the employee's personnel file.

2. Throughout the process, the employee and/or the supervisor or manager may request the involvement of the assigned Human Resources Representative.

EXAMPLES OF STAGE 1 ACTIONS THAT WILL INCUR A WARNING

1. Poor or irregular attendance

2. Leaving assigned work station without supervisor's or manager's authorization

3. Minor insubordination

4. Failure to observe minor safety, sanitary, medical rules and practices

5. Abuse of starting time, lunch times, or quitting time

6. Soliciting funds, memberships, or indulging in activities unrelated to employment (exceptions to this rule must be specifically authorized by the Vice President, Human Resources)

7. Smoking in restricted areas

8. Outside employment (i.e., moonlighting); an employee may not engage in employment outside his or her official hours if such employment will:

   (a) interfere with the proper and effective performance of his or her duties

   (b) appear to create a conflict of interest

   (c) subject the Company to public criticism or embarrassment

   (d) expose the Company to potential liability

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.

EXAMPLES OF SERIOUS MISCONDUCT

1. Serious verbal abuse of a supervisor or manager or other serious insubordination
2. Refusal to perform work assigned by designated supervisor or manager
3. Serious safety violations
4. Leaving Company premises without supervisor's or manager's authorization
5. Loafing or sleeping on the job
6. Approving or recording time of another employee for the purpose of creating a false record
7. Use of Company owned or leased motor vehicles for other than official business
8. Intentional interference with, limiting of work or slowing down of work progress
9. Unlawful harassment of other employees due to, but not limited to, age, sex, race, color,creed, religion, or national origin

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.

EXAMPLES OF GROSS MISCONDUCT

1. Theft of Company or personal property including tools and equipment assigned to individual employees

2. Violation of the drug and alcohol-free work environment policy and procedure

3. Engaging in fighting or horseplay on Company premises. Fighting and/or horseplay is defined as, but not limited to, pushing, slapping, hitting, or any physical contact or other action which may cause or result in injury or bodily harm to any individual

4. While in Company facilities, possession of firearms ammunition, explosives, or any other apparatus or material hazardous to employees or Company property

5. Failure to give true facts, or intentional falsification of any record when applying for a job or intentionally changing or altering in any way, without proper authorization, any Company records

6. Misuse or destruction of property, tools, or materials including the use of Company materials, equipment, or supplies for an employee's own convenience or benefit and removal of Company property from the Company

7. Continuing serious misconduct

8. Serious falsification of expense reports

9. Accepting or offering a bribe in exchange for a job or favor, which would cause the recipient to deviate from Company rules or honest endeavor, for personal or illegal gain

10. Use of privileged information; employees of the Company shall not use for personal gain or make other improper use of privileged information which is acquired in connection with employment

11. Gross negligence or intentional acts involved in non-compliance with environmental requirements.

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.

APPENDIX G

HEALTH & SAFETY
RULES & SAFE WORK PRACTICES

APPENDIX G

EMPLOYEE HEALTH AND SAFETY RULES

GENERAL SAFETY RULES

1. Immediately report unsafe acts, conditions: or equipment to your supervisor or Health and Safety Representative.

2. Immediately report all accidents resulting in property damage, injury or illness to your supervisor.

3. "Horseplay" and "roughhousing" is not permitted on company property.

4. Each employee is responsible for issued safety equipment. Report loss or damage immediately.

5. Safety glasses/goggles and hard hats (where applicable) will be provided to all "visitors."

6. Smoking is prohibited except in designated areas.

ALCOHOL AND DRUGS

1. The possession, use, consumption, sale, purchase, or transfer of any illegal and unauthorized drugs, controlled substances, and alcoholic beverages is not permitted on RRS properties or vehicles and is cause for immediate termination.

2. All employees must conform to RRS' Alcohol & Drug-Free workplace requirements.

COMPRESSED AIR

1. Never point an air hose at anyone.

2. Never use compressed air to clean clothing or equipment.

3. Never use compressed air to empty flammable liquid drums.

4. Do not remove pressure reducing devices.

COMPRESSED GASES

1. Cylinders must have a printed tag, label or other identification that specifies the contents. Do not accept cylinders without such identification. Do not destroy identification tags or labels.

2. Cylinder valves must be protected. Do not accept cylinders unless they are provided with cylinder valve protective caps. The caps must remain on cylinders when not in use.

3. Reject cylinders if any of these conditions are observed: large dents, leaks, severe corrosion, cuts or gouges.

4. Cylinders should be transported only on a portable truck, rack, or cart made for that purpose and secured so they cannot fall.

5. Do not drop cylinders or permit them to strike each other.

6. Chain or strap cylinders to a rack, bench, cart, or building column so they cannot fall over.

7. Never place any compressed gas cylinder in a place where it may be exposed to an electrical short circuit.

8. Empty Cylinder Handling - Close valve, replace cylinder valve protective cap and mark cylinder with chalk or tag: "**EMPTY**" or "**MT**".

9. Discharge Controls - Some cylinders may have unique threads or sizes of valves and fittings depending on the gas. Do not attempt to interchange. Automatic pressure regulators shall not be by-passed.

10. Leaking Cylinders and Fittings - If leaks are detected, the cylinder main control valve should be closed. Report the leak to your supervisor or Health and Safety.

11. Use the proper regulators, valves, and hoses on all compressed gas cylinders. Isolate cylinders, hoses and other equipment, keeping them adjacent to the work area, to prevent damage by other personnel, vehicles, etc.

12. Never withdraw acetylene at greater than 15 psi.

13. Never lay any cylinder on its side.

14. Never use copper tubing or fittings on flammable gas cylinders.

15. Do not wear oily or dirty gloves when handling or using compressed gas cylinders and equipment.

16. Segregate full and empty cylinders and store according to compatibility.

CONFINED SPACES

1. Any confined space entry must by authorized by an approved permit.

2. Entry into a confined space is prohibited if flammable gases exceed 10% of the lower explosive limit (LEL) or oxygen concentration is less than 19.5% or exceeds 23.5%.

3. Entry into a confined space containing toxic contaminants shall be permitted only after proper monitoring has been conducted and the appropriate PPE selected.

4. Anyone entering a confined space must be properly trained and follow RRS' Confined Space Entry procedure. Failure to do so may result in immediate termination.

CRANES AND MANLIFTS

1. Only qualified personnel shall operate cranes and manlifts.

2. Extend outriggers on a firm level surface positioned close to the work or place pads under outriggers for reinforcement.

3. Stay within limits for extension and weight.

4. Operations adjacent to overhead power lines are prohibited unless one of the following conditions are satisfied.

   A. Power line has been shut off and positive means taken to prevent lines from being energized.

   B. If the power line(s) are energized, Health and Safety must be contacted for further instruction.

5. Operate controls smoothly and maintain uninterrupted observation in the direction of travel.

6. Do not allow anyone to stand or walk under the load.

7. Manlifts will not be utilized without prior approval from Health and Safety.

ELECTRICAL

1. Only qualified personnel shall make electrical repairs or installations.

2. Consider all wires "live" until locked and tagged out. Keep a safe distance from "live" electricity.

3. Have electrical equipment properly grounded. Use only three-wire grounded receptacles and extension cords. Use Ground Fault Circuit Interrupter (GFCI) outlets or circuit breakers on all 110V outside, wet locations, or portable (5 KW or greater) power sources. Test GFCI before operation.

4. Do not use electrical power tools or equipment while standing in water. Keep cords out of wet areas.

5. Cord splices or repairs shall be electrically and mechanically equal to that cord's quality. No substandard patching is permitted.

6. Use explosion-proof fixtures and connections while working in confined spaces where flammable vapors could be present.

7. Inspect electrical grounding to prevent shock in case tool insulation breaks.

8. Inspect cord-supplied equipment for any ground problems before using.

9. Report suspect damaged equipment to you supervisor. Do not use until repaired and tested.

FALL PROTECTION

1. Use safety harness and safety line if rail protection or other fall protection is not available for heights of 4 feet or more.

2. Avoid shortcuts. Use ramps, stairs, walkways, or ladders.

3. Be sure of your footing. Watch out for overhanging or broken planks, slipper spots, loose objects, etc.

4. Do not block aisles or access to work areas. Maintain enough light on stairs, aisles, and work area to prevent falls.

5. Do not leave floor opening unprotected. Use strong cover, or 42-inch-high guardrail with midrail and toeboard.

6. Store cords, leads, hoses, etc. properly to avoid damage.

7. Spills and leaks are to be cleaned up immediately.

FIRE PROTECTION

1. Obey **"NO SMOKING"** signs.

2. Smoking is prohibited, except in designated areas.

3. Label clearly and store flammable liquid containers in a protected, ventilated, and approved area.

4. Use flammable liquids only in small amounts and in approved, self-closing containers.

5. Do not refuel a running vehicle or engine. Clean up spills before starting. Extreme caution must be taken when fueling vehicles or engines with hot surfaces.

6. Never use gasoline or any flammable liquid as a cleaner.

7. Store oily rags in approved self-closing metal containers and dispose of them properly.

8. Bond and ground all flammable liquid containers and transfer equipment when transferring or filling product.

9. Use only explosion proof electrical equipment in potentially flammable vapor areas.

10. Only approved fire extinguisher will be used. Do not obstruct fire extinguisher from direct view or access.

11. Keep portable heating equipment away from combustible materials.

12. Make sure engines are away from combustibles and exhaust is properly ventilated.

HAZARD COMMUNICATION

1. All employees have a right to know the properties of hazardous materials to which they may be exposed.

2. All employees will be informed of hazards of materials to which they are exposed through training and information provided by RRS.

3. Material Safety Data Sheets (MSDS) are available on hazardous materials used at each RRS project site.

4. All hazardous material containers obtained from outside suppliers shall identify the hazardous contents and appropriate hazard warning.

HEAD, FOOT, AND EYE PROTECTION

1. Hard hats and eye protection must be worn by employees and visitors in all areas where such requirements are indicated.

2. Wear safety glasses in designated areas or if the potential for an eye injury exists.

3. Splash goggles and/or face shield must be worn when there is a possibility of any injury from chemicals, dusts, chips, sparks or hot splashing metal.

4. Approved steel-toed, chemical resistant safety footwear must be worn in designated areas or where mechanical and/or chemical protection is necessary.

HEAT STRESS

1. Avoid prolonged exposure in hot environments by taking proper precautions. If you work in hot environments, make sure you do the following:

   a. Drink plenty of liquids. Do not drink alcoholic beverages.

   b. Take adequate rest periods in a cool, shaded environment.

   c. Remove personal protective equipment during rest periods.

COLD STRESS

1. Avoid prolonged exposure in cold environments by taking proper precautions. If you work in cold environments, make sure you do the following:

   a. Wear adequate clothing to protect against cold exposure.

   b. Several thin layers of clothing with an outer wind barrier provides better protection as opposed to one thick layer.

   c. Avoid use of damp or wet clothing.

   d. Immediately remove any person from a cold environment who is suspected of suffering from hypothermia.

e. Do not rub any part of the body which may be frost bitten.

HOUSEKEEPING

1. Keep work site clean and orderly.

2. Shavings, dust, scraps, rags, oil or grease must not accumulate. Make good housekeeping part of the job. Remove tools and trash at the end of each job completion.

3. Keep loose materials off stairs, walkways, ramps, platforms, etc.

4. Do not block aisles, traffic lanes, fire exits or electrical panels and access to all emergency equipment such as eye washes, deluge showers, fire blankets, fire extinguisher, first aid supplies, emergency communication devices, etc.

LADDERS AND SCAFFOLDS

1. Inspect ladders before each use and do not use if damaged. Do not use painted wooden ladders.

2. When ascending or descending, the climber must face the ladder using both hands. Use hand line or material hoist to lift loads. Do not lift electrical tools by their cords.

3. Use only sturdy ladders on firm base. Angle base 1/4 of ladder working length. Keep area clear of scrap, tools, hose, etc.

4. Have ladder reach at least three feet above landing for easy access. Tie off ladder at top. Secure bottom and brace long ladders.

5. Avoid using metal ladders in areas containing electric circuits to prevent short circuits or electric shock.

6. All scaffolds and their supports shall be capable of supporting the load they are designed to carry with a safety factor of at least 4.

7. All planking shall be of a scaffold grade, as recognized by grading rules for the species of wood used.

8. Platform planks should overlap supports not less than six inches nor more than 18 inches, and be secured from shifting.

9. Railings and toeboards shall be installed on all open sides and ends of platforms more than 4 feet above the floor.

10. Keep all tools and material away from edge of scaffold, platforms, shaft openings, etc.

LIFTING

1. Always size up the load first. Get help with heavy or bulky materials to avoid dropping the load or getting thrown off balance, or injuring your back.

2. Bend knees, keep back nearly straight when lifting. Leg muscles, not your back, should do the work. Do not twist.

3. Have just one person give commands when team lifting oversized loads. Before you lift, check for clear path. Then have clear view while carrying the load.

MACHINES AND MACHINE GUARDING

1. Before starting machinery, opening valves, switches, etc., check safety of workmen. Have safety guards in place.

2. Never adjust or repair machinery while in motion. Lock out, block and/or bleed air as required to prevent any possible movement.

3. Operate machinery and vehicles within rated capacity and at safe speeds.

4. Report defective power tools or machinery to supervisor immediately.

5. Never alter or remove safety devices; such as guards, alarms, etc. from machinery.

NOISE

1. Prolonged exposure to excessive noise (above 85 decibels) without hearing protection can impair your hearing. Refer to the RRS Hearing Conversation procedure for specific requirements.

2. Wear approved hearing protection in areas designated "Hearing Protection Required" (such as hydroblasting).

OVERHEAD LOADS

1. Be aware of work going on around you. Keep clear of suspended loads, traffic areas, etc.

2. Place barricades and signs to warn of overhead danger, traffic, excavation, etc. Have warning lights, flagman, or watchman if necessary.

3. Keep check on loads, lines, slings, blocks, clamps, or other tackle. Repair/replace defects. Hang up slings if not in use. Always check for sling capacity.

RESPIRATORY PROTECTION

1. Wear an approved respirator when working with hazardous materials or as directed by Health & Safety. Reference Rust's Respiratory Protection procedure.

2. Do not ride or drive any vehicle or mobile equipment unless authorized. All occupants shall wear seat belts provided.

3. Keep unloaded forks in the down position when not loaded. Always travel with the load upgrade when ascending or descending grades in excess of 10 percent.

4. Perform vehicle pre-trip inspection complete inspections report as required. Safety discrepancies must be correct before using vehicle.

5. Use a spotter when backing vehicles whenever possible. Check the area for obstructions for obstructions if a spotter is not available.

6. All power units must be equipped with a fire extinguisher that is properly filled and readily accessible.

7. Do not ride on the forks of lift truck or on a load, rigging, hook or ball, or pickup bed.

8. Check operation of back up alarm. Do not alter or remove safety equipment such as alarms, fire extinguisher, etc. from vehicles.

9. Observe all federal, state, local and facility project speed limits.

WELDING AND CUTTING

1. Welding, cutting and torching operation require a **Hot work Permit**.

2. Welding and cutting work shall be closely supervised. Remove or shield nearby combustibles.

3. Keep a fire watch with adequate fire extinguisher during and after "hot work" as job location requires.

4. Do not look at welding or cutting operations without wearing proper eye protection.

5. Check hose, fitting, valves for leaks using soapy water. Cylinders shall be kept upright and secured.

6. Transport or move cylinders only with caps securely in place.

7. Keep oily cloths away from oxygen.

8. Always light torch with a "torch lighter", never use a match or cigarette. Never light in a keg or drum.

9. Open cylinder valves slowly to prevent damage to regulator. Never use a damaged regulator.

10. Do not wear oil-soaked or other contaminated clothing. Check clothing after work for hidden hot slag or molten metal.

11. Wear approved clothing and personal protective equipment for welding.

12. Bleed lines and shut off cylinders after each use.

13. Do not place torch unattended in manways of vessels or tanks.

14. Do not leave welding unit on unattended.

JEWELRY, ORNAMENTS, LOOSE CLOTHING

1. Safe work practices shall be maintained and followed by employees, contractors and visitors while on RRS project sites.

2. Jewelry or ornaments, i.e., rings, watches, bracelets, neck chain, and earrings shall not be worn while working with moving machines, power tools, and/or equipment where the possibility exists for entrapment of the jewelry or ornaments in the machines, power tools and/or equipment.

3. Long, loose hair or "pony tails" will be secured and covered at all process work locations and other works areas where the possibility exists for hair to become caught in machines, power tools and/or equipment or be contaminated with chemicals.

4. Loose clothing and attire; i.e., shirt tails, sleeves, neck ties, scarves, etc., shall be secured to prevent entrapment in moving machines, power tools and/or equipment.

1.0 PURPOSE

To provide a code of conduct which will allow for a smooth operation of the job site with as little time loss as possible due to violation of safety rules and regulations.

2.0 SCOPE

This standard applies to all Company operating units.

3.0 GENERAL REQUIREMENTS

A copy of the Company Safety Rules and Regulations must be posted at all job sites, in such a manner and location that they can be readily available to all employees of the project.

Compliance with the Safety Rules and Regulations is considered a condition of employment. Disciplinary action may be taken for violations of these Safety Rules and Regulations.

A copy of the Safety Rules and Regulations will be made available to any employee or employee representative requesting a personal copy.

EXHIBIT 1

COMPANY SAFETY RULES AND REGULATIONS

THE FOLLOWING MUST BE STRICTLY ADHERED TO BY ALL PERSONNEL WHILE ON COMPANY JOB SITES AND COMPANY PROPERTY!

- Employees must be in "working" clothes and ready for work at the designated starting time.
- Employees may take lunch breaks only during designated times and must eat, smoke or drink in the area assigned.
- All personnel are required to comply with Company's Alcohol and Drug Free Workplace Policy as a condition of employment. Violation of any portion of this Policy may be cause for disciplinary action.
- Personnel shall comply with both verbal and written instructions from a supervisor or foreman.
- While on the job site, personnel shall comply with all OSHA Safety and Health Standards and with each of the safety procedures required by the Company safety program.
- All personal work injuries shall be reported immediately to a supervisor.
- All unsafe conditions shall be reported immediately to a supervisor.
- Hard hats must be worn by all personnel while on the job site.
- Employees shall use their personal protective equipment as required by law, and company procedures.
- If sampling equipment has been attached to an individual, it shall not be tampered with.
- Good housekeeping is mandatory.
- Employees will not engage in horseplay, practical jokes, or mischief while on the job site or Company property.
- Fighting or attempting bodily injury to another employee or Company visitor is not permitted.
- Unauthorized use of, tampering or willful or wanton neglect in the care and/or use of Company property shall not be permitted.
- The possession of unauthorized weapons is expressly forbidden.
- Falsifying Company records and/or reports will not be tolerated.

APPENDIX H

HEALTH & SAFETY TRAINING REQUIREMENTS

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS (1 of 3)

JOB TITLE OR POSITION DESCRIPTION	HEALTH AND SAFETY TRAINING - GENERAL REQUIREMENTS						FIRST AID AND CPR		CONFINED SPACE ENTRY		LAB SAFETY
	HAZWOPER NEW HIRE TRAINING (24 HRS)	HAZWOPER NEW HIRE TRAINING (40 HRS)	HAZWOPER (ON THE JOB SUPERVISION) (24 HRS)	HAZWOPER SUPERVISOR TRAINING (8 HRS)	HAZWOPER ANNUAL REFRESHER (8 HRS)	HEALTH AND SAFETY FOR ADMIN OPERATIONS (4 HRS)	FIRST AID 4-HOUR (BIANNUAL)	ADULT CPR 4 HOUR (ANNUAL)	COMPETENT WORKER (8 HOURS)	QUALIFIED SUPERVISOR (24 HRS)	CHEMICAL HYGIENE PLAN (2 HRS)
ADMINISTRATIVE ASSISTANT/CLERICAL	M (9)					M	R	R			
COORDINATOR/ ACCOUNTANT	M (9)					M	R	R			
ADMINISTRATOR/ TECHNICAL WRITER	M (9)					M	R	R			
SUPERVISOR	M (9)			R (6)		M	R (2)	R (2)			
MANAGER	M (9)			R (6)		M	R (2)	R (2)			
REGIONAL MANAGEMENT	M (9)			R (6)	M						
OPERATIONS											
ENGINEER	M (1)		M	R	M		O	O			
ENVIRONMENTAL		M	M	R	M		R	R		R	O
ESTIMATOR	M (1)			O	M		R	R			
EQUIPMENT OPERATOR		M	M	R	M		M	M	R (4)		
FIELD TECHNICIAN		M	M	R	M		M	M	R (4)		
HEALTH & SAFETY		M	M	M	M	M	M	M	M	M	M
LAB PERSONNEL	M (1)		M	M (6)	M		R	R			M
PROJECT SUPERINTENDENT		M	M	M	M		M (3)	M (3)		R (5)	M (6)
PROJECT & OPS MANAGER		M	M	M	M		M (3)	M (3)		R (5)	M (6)
BUSINESS DEVELOPMENT MANAGER	M (1)			R	M		O	O			
QC/SURVEYOR/ GEOLOGIST		M	M	O	M		R	R		R (5)	
PROJECT COORDINATOR		M	M	M	M		M	M	M	R (5)	
SITE SAFETY OFFICER (SSO)		M	M	M	M		M	M		M	M (6)
SITE ENVIRONMENTAL OFFICER (SEO)		M	M	M	M		R	R		R (5)	
INDUSTRIAL HYGIENE TECHNICIAN (IHT)		M	M	R	M		M	M	M		

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS (2 OF 3)

JOB TITLE OR POSITION DESCRIPTION	SAFETY TRAINING OBSERVATION PROGRAM		SPECIAL EMPHASIS TRAINING				ENVIRONMENTAL TRAINING		
	STOP FOR EMPLOYEES (8 HRS)	STOP FOR SUPERVISORS (16 HRS)	FORK LIFT DRIVER TRAINING (8 HRS)	SITE SAFETY OFFICER TRAINING (40 HRS)	EXCAVATION SAFETY: COMPETENT PERSON TRAINING (8 HRS MIN)	INDUSTRIAL HYGIENE TECHNICIAN TRAINING (24 HRS)	SITE ENVIRONMENTAL OFFICER TRAINING (8 HRS MIN)	ENVIRONMENTAL AWARENESS TRAINING (4 HOURS)	HM-181 TRAINING
ADMINISTRATIVE ASSISTANT/CLERICAL	M							M	
COORDINATOR/ ACCOUNTANT	M							M	
ADMINISTRATOR/ TECHNICAL WRITER	M							M	
SUPERVISOR		M						M	
MANAGER		M						M	
REGIONAL MANAGEMENT		R					R	M	
OPERATIONS									
ENGINEER		M			M		R (10)	M	
ENVIRONMENTAL		M		R		R	M	M	
ESTIMATOR		R		O	R	O		M	
EQUIPMENT OPERATOR	M		M	O (7)	R (7)	O (11)	O (10)	M	
FIELD TECHNICIAN	M		R (8)	O (7)	R (7)	O (11)	O (10)	M	
HEALTH & SAFETY		M	R	M	M	M	M	M	
LAB PERSONNEL	M			R (7)		R (11)		M	
PROJECT SUPERINTENDENT		M		R (7)	R (6)	R (11)	M	M	
PROJECT & OPS MANAGER		M		R (7)	R (6)	R (11)	M	M	
BUSINESS DEVELOPMENT MANAGER		R						M	
QC/SURVEYOR/ GEOLOGIST	M			O	M	O		M	
PROJECT COORDINATOR		M		R (7)	R (7)	R (11)	M	M	
SITE SAFETY OFFICER (SSO)		M	R	M	M	M	M	M	
SITE ENVIRONMENTAL OFFICER (SEO)		M		R (7)	R (7)	R (11)	M	M	
INDUSTRIAL HYGIENE TECHNICIAN (IHT)	M			R (7)	R (7)	M	R (10)	M	

RUST REMEDIAL SERVICES' EMPLOYEE SAFETY, HEALTH AND ENVIRONMENTAL TRAINING REQUIREMENTS FOOTNOTES (3 OF 3)

M: MANDATORY - REQUIRED BY COMPANY POLICY, H & S REGULATIONS, OR BOTH.

R: RECOMMENDED - PARTICIPATION SUGGESTED WHEN TRAINING WILL PROVIDE USEFUL INFORMATION, ENHANCED UNDERSTANDING OF WORK REQUIREMENTS, OR PREREQUISITE FOR JOB ENHANCEMENT.

O: OPTIONAL - PARTICIPATION ENCOURAGED IF TRAINING IS RELEVANT TO POSITION ASSIGNMENT AND WILL CONTRIBUTE TO IMPROVED JOB UNDERSTANDING.

BLANK: NOT APPLICABLE

(1) 40 HOUR TRAINING MAY BE REQUIRED BY PERMIT CONDITIONS OR CONTRACT REQUIREMENTS AT CERTAIN PROJECT LOCATIONS.

(2) IT IS MANDATORY THAT AT LEAST ONE EMPLOYEE AT EACH OFFICE FACILITY OR SITE BE TRAINED IN FIRST AID AND CPR.

(3) IT IS MANDATORY THAT PROJECT MANAGERS MAINTAIN FIRST AID AND CPR CERTIFICATION IN ADDITION TO OTHER SITE EMPLOYEES.

(4) THIS TRAINING IS MANDATORY IF ENTRY INTO CONFINED SPACES IS REQUIRED.

(5) THIS TRAINING IS MANDATORY IF SUPERVISION AND PERMIT APPROVAL OF CONFINED SPACE ENTRY WORK IS REQUIRED.

(6) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WITH DIRECT EMPLOYEE SUPERVISORY RESPONSIBILITY IN THIS AREA.

(7) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WHICH SHARE RESPONSIBILITY AS SITE SAFETY OFFICER.

(8) THIS TRAINING IS MANDATORY FOR ANYONE RESPONSIBLE FOR THE OPERATIONS AND USE OF FORK LIFT TRUCKS.

(9) PERSONNEL ON ACTIVE PROJECT SITES OR REQUIRED TO ENTER ACTIVE PROJECT AREAS MAY REQUIRE A MINIMUM OF 24 HOURS OF TRAINING.

(10) THIS TRAINING IS MANDATORY FOR THOSE POSITIONS WHICH SHARE RESPONSIBILITY AS SEO.

(11) THIS TRAINING IS MANDATORY FOR THOSE PERSONNEL WHO SHARE RESPONSIBILITY AS SITE SAFETY OFFICER, SITE INDUSTRIAL HYGIENE TECHNICIAN, OR BOTH.

APPENDIX I

DISCIPLINARY PROCEDURES

RUST REMEDIAL SERVICES INC.

DIRECTIVE NUMBER: PD-313
ISSUE DATE: January 1, 1993
REVISION DATE: January 1, 1993

TITLE: PROGRESSIVE DISCIPLINE

RUST Remedial Services Inc. will discourage employee misconduct and control poor performance through progressive disciplinary steps. Documented progressive discipline where required will be uniformly applied to all employees to better achieve effectiveness and nondiscrimination.

The above notwithstanding, serious or gross misconduct, will result in an immediate investigation and application of appropriate penalties, including (without limitation) termination. See Exhibits II and III for examples of serious and gross misconduct.

PROCEDURE:

1. The progressive discipline steps detailed below apply to employee negligence, misconduct, poor performance and work rule infractions and shall serve as a model for handling disciplinary situations. See Exhibit I for examples of actions that may receive the progressive discipline steps set forth in this statement.

   (a) State 1 (Warning)

   The supervisor or manager will prepare a written warning letter summarizing the behavior being addressed, including a definition of the expected behavior modification. The supervisor or manager will review the warning letter with the assigned Human Resources Representative prior to any discussion with the employee. The supervisor or manager will discuss the employee's behavior with the employee in private and as free from interruptions as possible. All aspects of the behavior will be covered. The employee shall be told the area(s) in which behavior modification is expected and will establish a timeframe for accomplishment. It must be made clear to the employee that without improvement, more severe action will be necessary. The supervisor or manager will enumerate clearly and in writing the assistance, if any, to be provided to the employee. The employee shall be asked to verbally summarize his or her understanding of the matter and to sign the written summary. If the employee refuses to sign, it shall be so noted on the form and witnessed by a superior of the supervisor or manager. The supervisor or manager will provide a copy of the written warning to the employee and will forward the original to the assigned Human Resources Representative to be placed in the employee's personnel file.

   (b) State 2 (Final Warning)

   If the employee's behavior has not improved within the time limits established in Stage 1, the supervisor or manager will confer with the assigned Human Resources Representative regarding the nature of the behavior and proposed disciplinary action. The supervisor or manager will meet with the employee, in private and as free from interruptions as possible, a second time. The supervisor or manager will inform the employee of exact disciplinary actions to be implemented if the requested behavior modifications are not achieved by a date also indicated. These disciplinary actions may include, but are not necessarily limited to, termination of employment, suspension without pay, reduction in pay, or reduction in pay grade. A final written warning letter summarizing the behavior problem and the events of this meeting will be prepared by the supervisor or manager. The employee may enter comments on the same document if he or she so desires. The supervisor or manager will request the employee to sign the document. If the employee refuses to sign the document, the supervisor or manager will so note on the document and have it witnessed by a superior. The supervisor or manager will provide a copy of the final written warning to the employee and will forward the original to the assigned Human Resources Representative to be placed in the employee's personnel file.

(c) If there is no improvement within the prescribed time frame, the disciplinary actions set forth in Stage 2 are carried out by the supervisor or manager. The supervisor or manager shall summarize the behavior, disciplines and events of this procedure in writing and forward a copy of this document to the assigned Human Resources Representative prior to any discussion with the employee. A copy of this document shall be placed in the employee's personnel file.

2. Throughout the process, the employee and/or the supervisor or manager may request the involvement of the assigned Human Resources Representative.

EXAMPLES OF STAGE 1 ACTIONS THAT WILL INCUR A WARNING

1. Poor or irregular attendance

2. Leaving assigned work station without supervisor's or manager's authorization

3. Minor insubordination

4. Failure to observe minor safety, sanitary, medical rules and practices

5. Abuse of starting time, lunch times, or quitting time

6. Soliciting funds, memberships, or indulging in activities unrelated to employment (exceptions to this rule must be specifically authorized by the Vice President, Human Resources)

7. Smoking in restricted areas

8. Outside employment (i.e., moonlighting); an employee may not engage in employment outside his or her official hours if such employment will:

   (a) interfere with the proper and effective performance of his or her duties

   (b) appear to create a conflict of interest

   (c) subject the Company to public criticism or embarrassment

   (d) expose the Company to potential liability

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.

EXHIBIT II

EXAMPLES OF SERIOUS MISCONDUCT

1. Serious verbal abuse of a supervisor or manager or other serious insubordination
2. Refusal to perform work assigned by designated supervisor or manager
3. Serious safety violations
4. Leaving Company premises without supervisor's or manager's authorization
5. Loafing or sleeping on the job
6. Approving or recording time of another employee for the purpose of creating a false record
7. Use of Company owned or leased motor vehicles for other than official business
8. Intentional interference with, limiting of work or slowing down of work progress
9. Unlawful harassment of other employees due to, but not limited to, age, sex, race, color,creed, religion, or national origin

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.

EXAMPLES OF GROSS MISCONDUCT

1. Theft of Company or personal property including tools and equipment assigned to individual employees

2. Violation of the drug and alcohol-free work environment policy and procedure

3. Engaging in fighting or horseplay on Company premises. Fighting and/or horseplay is defined as, but not limited to, pushing, slapping, hitting, or any physical contact or other action which may cause or result in injury or bodily harm to any individual

4. While in Company facilities, possession of firearms ammunition, explosives, or any other apparatus or material hazardous to employees or Company property

5. Failure to give true facts, or intentional falsification of any record when applying for a job or intentionally changing or altering in any way, without proper authorization, any Company records

6. Misuse or destruction of property, tools, or materials including the use of Company materials, equipment, or supplies for an employee's own convenience or benefit and removal of Company property from the Company

7. Continuing serious misconduct

8. Serious falsification of expense reports

9. Accepting or offering a bribe in exchange for a job or favor, which would cause the recipient to deviate from Company rules or honest endeavor, for personal or illegal gain

10. Use of privileged information; employees of the Company shall not use for personal gain or make other improper use of privileged information which is acquired in connection with employment

11. Gross negligence or intentional acts involved in non-compliance with environmental requirements.

The above are to be used as examples only. Other conduct may fall within this "warning" category. The Company retains the right, at its sole discretion, to determine which, and to what extent, conduct or misconduct of an employee falls within the above or any other category of behavior relating to the Progressive Disciplinary Procedure.